

## RE: Construction of the firing range building

### Background:

As part of the police department's 2023 fiscal budget, a capital improvement project was approved and funded to construct a police firing range building. This building was the second phase of the firing range construction project that was started in 2022. This building will serve as storage, classroom, and restrooms for officers while they are training at the police firing range.

### Analysis:

While exploring our options to get this construction project completed, we contacted Hamby Construction LLC. located in Springfield, MO. This construction company is currently part of a co-operative which allows the City of Nixa to utilize a cooperative contract they have with the City of Springfield for certain construction work. A preliminary quote was obtained for the construction project.

To get the very best pricing for the construction of the project, I requested a formal bid process also be initiated by the purchasing department. This bid was open for one month. The request for bid was sent to 91 companies and posted on a bidding website.

We received two responses for the project. The first bid which was over the allocated budget for the project totaled **\$553,736.58** and the other bid being just under the allocated budget at **\$345,328.13**.

These two bids were compared to the formal quote Hamby Construction LCC provided which came in at **\$269,818.42**. It was clear there were significant cost savings to move forward with Hamby Construction.

Attached is a contract for the construction of the firing range building between the City of Nixa and Hamby Construction LLC.

### Recommendation:

It is the police department staff's recommendation that this resolution be approved.

### MEMO SUBMITTED BY:

**Joe Campbell** | Chief of Police

jcampbell@nixa.com | 417-725-2510



**RESOLUTION NO. 2023-29**

**A RESOLUTION OF THE COUNCIL OF THE CITY OF NIXA ACCEPTING THE BID OF HAMBY CONSTRUCTION LLC FOR THE CONSTRUCTION OF A POLICE FIRING RANGE BUILDING AND AUTHORIZING THE CITY ADMINISTRATOR TO EXECUTE A CONTRACT FOR THE SAME.**

**WHEREAS** City Council, by passage of Resolution No. 2022-123, adopted the 2023-2027 Capital Improvement Program ("CIP"); and

**WHEREAS** included in the CIP is a project known as the "Police Firing Range Building" ("Project"); and

**WHEREAS** City staff, pursuant to the City's adopted purchasing procedures (Resolution 2019-113), as amended, have solicited bids to construct a fence to enclose the City's new tree farm; and

**WHEREAS** after reviewing all submitted bids, City staff has determined that Hamby Construction LLC ("Contractor") provided the best bid for the Project; and

**WHEREAS** City Council desires to award the Contract for the Project to the Contractor and to authorize the City Administrator to execute the Contract attached hereto as "Resolution Exhibit A."

**NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF NIXA, AS FOLLOWS, THAT:**

**SECTION 1:** City Council hereby accepts the bid of the Contractor for the Project at the price and sum of \$269,818.42. The City Administrator, or designee, is hereby authorized and directed to enter into a contract with the Contractor. Said contract to be in substantially similar form as the document attached hereto, and incorporated herein by this reference, as "Resolution Exhibit A."

**SECTION 2:** The City Administrator and the officers of the City are hereby authorized to do all things necessary or convenient to carry out the terms and intent of this Resolution.

**SECTION 3:** If applicable, all workers performing work under the contract authorized by this Resolution shall be paid a wage of no less than the prevailing hourly rate of wages for work of a similar character in this locality or the public works contracting minimum wage, whichever is applicable. The Contractor shall fully comply with the provisions and requirements of the Missouri State Prevailing Wage Law, if applicable. If applicable, contractors and any subcontractor performing work under this contract must provide a 10-hour OSHA construction safety training program, or similar program approved by the Department of Labor, for on-site employees, unless employees demonstrate they previously completed the program.



**RESOLUTION NO. 2023-29**

**SECTION 4:** This Resolution shall be in full force and effect from and after its final passage by the City Council and after its approval by the Mayor, subject to the provisions of section 3.11(g) of the City Charter.

**ADOPTED BY THE COUNCIL THIS 22<sup>nd</sup> DAY OF May, 2023.**

ATTEST:

\_\_\_\_\_  
PRESIDING OFFICER

\_\_\_\_\_  
CITY CLERK

**APPROVED BY THE MAYOR THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023.**

ATTEST:

\_\_\_\_\_  
MAYOR

\_\_\_\_\_  
CITY CLERK

APPROVED AS TO FORM:

\_\_\_\_\_  
CITY ATTORNEY



**ROUTE ORDER:** Contractor signs, route to City Clerk, City Admin signs two originals, Clerk adds date, City Attorney signs, return one original by mail to Organization and City Clerk retains one original.

<b>EFFECTIVE DATE:</b>	<b>TERMINATION DATE:</b>	<b>CONTRACT NUMBER:</b>
(X) <b>NEW CONTRACT</b> ( ) <b>RENEWAL OF CONTRACT NO.</b> ( ) <b>Addendum No.</b> __		
<b>CITY</b>		<b>CONTRACTOR</b>
Name: City of Nixa, Missouri Address: 715 W. Mt. Vernon St., PO Box 395 Nixa, MO 65714 Phone: 417.725.3785 Attn: Joe Campbell Dept: Police Email: jcampbell@nixa.com		Name: Hambey Construction, LLC Address: 3440 W. Division St. Springfield, MO 65770 Phone: 417-840-8615 Attn: Eric Hambey Email: eric@hambeyconstruction.com

## CONSTRUCTION CONTRACT

**THIS CONSTRUCTION CONTRACT** ("Contract") is made and entered into upon its execution by the parties identified above.

**WHEREAS** the City, after conducting a Request for Bid solicitation process, referenced as RFB-012-2023/Police and utilizing Job Order cooperative contract (Contract #: 2021-0104) with the City of Springfield, to engage Contractor to perform certain construction work; and

**WHEREAS** the City desires to engage Contractor to perform such work under the terms and conditions of this Contract; and

**WHEREAS** contractor desires to perform such work under the terms and conditions of this Contract.

**NOW, THEREFORE**, for the considerations herein expressed, it is mutually agreed by and between the City and the Contractor as follows:

**1. Manner and Time for Completion.** The City agrees to engage the services of the Contractor and the Contractor agrees to perform said Construction Services in accordance with the standard of care, skill, and expertise ordinarily used by members of the Contractor's profession in the performance of similar services. The Construction Services are more specifically described in Exhibit A, which is attached hereto and incorporated herein by this reference. Contractor shall furnish all supervision, labor, tools, equipment, materials, and supplies necessary to perform the Services at Contractor's own expense in accordance with the contract documents, any applicable City ordinances, and any applicable state or federal laws within 120 calendar days from the date Contractor is ordered to proceed, which order shall be issued by the City Administrator within 30 days after the date of execution of this Contract. The project shall be completed no later than October 1, 2023.

**2. Prevailing Wage.** In compliance with sections 290.210 through 290.340 RSMo, all workers performing work under this Contract shall be paid a wage of no less than the "prevailing hourly rate of wages" for work of a similar character in this locality or the public works contracting minimum wage, whichever is applicable, as set out in the Wage Order attached hereto as Exhibit C and made part of this Contract. If at any time the Contractor is found to not have paid prevailing wages, the Contractor shall forfeit as a penalty to the City \$100.00 for each calendar day or portion of a calendar day for each



worker paid less than the stipulated required rates for any work done under this Contract by the Contractor or by any subcontractor under the Contractor. Notwithstanding the foregoing, if the engineer's estimate of the total project cost or the bid accepted by the City is \$75,000.00 or less, then all labor utilized in the construction of the improvements shall not be required to pay the "prevailing rate of wages" or the public works minimum wage. However, if the project becomes subject to a change order that increases the total project cost to more than \$75,000.00, a "prevailing hourly rate of wages" or the public works contracting minimum wage, whichever is applicable, shall be paid for all labor utilized in the construction of the improvements but only for that portion of the project which exceeds \$75,000.00.

**3. Insurance Requirements.** Without limiting any of the other obligations or liabilities of the Contractor, the Contractor shall secure and maintain at its own cost and expense, throughout the duration of this Contract and until the work is completed and accepted by the City, insurance of such types and in such amounts as may be necessary to protect it and the interests of the City against all hazards or risks of loss as hereunder specified or which may arise out of the performance of this Contract. The form and limits of such insurance, together with the underwriter thereof in each case, are subject to approval by the City. Regardless of such approval, it shall be the responsibility of the Contractor to maintain adequate insurance coverage at all times during the term of this Contract. Failure of the Contractor to maintain coverage shall not relieve it of any contractual responsibility or obligation or liability in general or under this Contract.

The certificates of insurance, including evidence of the required endorsements hereunder or the policies, shall be filed with the City within 10 days after the date of the receipt of Notice of Award of the Contract to the Contractor and prior to the start of work. All insurance policies shall require that the insurance company in question provide 30 days written notice prior to modification or cancellation of such insurance. Such notices shall be mailed, certified mail, return receipt requested, to the address for the City listed at the top of this Contract.

As of January 1, 2023, the minimum coverage for the insurance referred to herein shall be as set out below:

**a. Workers' Compensation** – Statutory coverage per RSMo. 287.010 et seq.  
**Employer's Liability** – \$1,000,000.00

**b. Commercial General Liability Insurance**, including coverage for Premises, Operations, Products and Completed Operations, Contractual Liability, Broad Form Property Damage, Independent Contractors, Explosion, Collapse, and Underground Property Damage and blasting if blasting is required. Such coverage shall apply to bodily injury and property damage on an "Occurrence Form Basis" with limits of at least Three Million Two Hundred Fifty-Eight Thousand Three Hundred Sixty-Eight and no/100 Dollars (\$3,258,368.00) for all claims arising out of a single accident or occurrence and at least Four Hundred Eighty-Eight Thousand Seven Hundred Fifty-Five and no/100 Dollars (\$488,755.00) with respect to injuries and/or death of any one person in a single occurrence and an amount not less than at least \$1,000,000 for all claims to property arising out of a single occurrence and at least \$100,000 to any one owner with respect to damages to property. Contractor agrees that the proceeds of such insurance policy shall first be used to pay any award, damages, costs, and/or attorneys' fees incurred by or assessed against City, its employees, officers and agents, before payment of any award, damages, costs or attorney's fees of Contractor, its employees, officers or agents. Contractor agrees to cause its insurer to name City as an additional insured on such insurance policy, including the City as an additional insured for coverage under its products-completed operations hazard, and said policy shall be primary and noncontributory.



**c. Automobile Liability Insurance** covering bodily injury and property damage for owned, non-owned and hired vehicles, with limits of at Three Million Two Hundred Fifty-Eight Thousand Three Hundred Sixty-Eight and no/100 Dollars (\$3,258,368.00) for all claims arising out of a single accident or occurrence and at least Four Hundred Eighty-Eight Thousand Seven Hundred Fifty-Five and no/100 Dollars (\$488,755.00) with respect to injuries and/or death of any one person in a single accident or occurrence.

**d. Owner's and Contractor's Protective Liability Insurance.** To protect the City, its agents, servants, and employees from claims which may arise from the performance of this Contract, with limits of at least Three Million Two Hundred Fifty-Eight Thousand Three Hundred Sixty-Eight and no/100 Dollars (\$3,258,368.00) for all claims arising out of a single accident or occurrence and at least Four Hundred Eighty-Eight Thousand Seven Hundred Fifty-Five and no/100 Dollars (\$488,755.00) with respect to injuries and/or death of any one person in a single accident or occurrence. The Owner's and Contractor's Protective Liability Insurance must:

1. Be a separate policy with the named insured being: The City of Nixa, Missouri; and
2. Be with the same insurance company with which the Contractor carries its Commercial General Liability Insurance and Automotive Liability Insurance; and
3. Contain an endorsement that disclaims coverage for any claim barred by the doctrines of sovereign immunity or official immunity, except attorney's fees and other litigation costs incurred in defending a claim. Nothing contained in this policy (or this endorsement thereto) shall constitute any waiver of whatever kind of these defenses or sovereign immunity or official immunity for any monetary amount whatsoever.

**e. Subcontracts.** In case any or all of the performance of this Contract is sublet, the Contractor shall require the subcontractor to procure and maintain all insurance required in subparagraphs (a), (b) and (c) hereof and in like amounts. Contractor shall require any and all subcontractors with whom it enters into a contract to perform work on this project to protect the City through insurance against applicable hazards or risks and shall, upon request of the City, provide evidence of such insurance.

**f. Notice.** The Contractor and/or subcontractor shall furnish to the City prior to beginning the work contemplated by this Contract, the policy as specified in subparagraph (d), and satisfactory proof of bearing all the insurance required by this Contract, with the provision that policies shall not be canceled, modified or non-renewed without 30 days written notice to the City.

**g. Legislative or Judicial Changes.** In the event the scope or extent of the City's tort liability as a governmental entity as described in Section 537.600 through 537.650 RSMo is broadened or increased during the term of this Contract by legislative or judicial action, the City may require Contractor, upon 10 days written notice, to execute a contract addendum whereby the Contractor agrees to provide, at a price not exceeding Contractor's actual increased premium cost, additional liability insurance coverage as the City may require to protect the City from increased tort liability exposure as the result of such legislative or judicial action. Any such additional insurance coverage shall be evidenced by an appropriate certificate of insurance and shall take effect within the time set forth in the addendum.

**4. Performance and Payment Bonds.** The Contractor shall furnish a Performance Bond and a



Labor and Materials Payment Bond with surety approved by the City and on the forms approved by the City, each bond shall be in the amount of **\$269,818.42 (full amount of contract)** conditioned upon the full and faithful performance of all major terms and conditions of this Contract and payment of all labor and material suppliers. It is further mutually agreed between the parties that if at any time after the execution of this Contract the City deems the surety or sureties upon such bond(s) to be unsatisfactory, or if, for any reason, such bond(s) ceases to be adequate to cover the performance of the work, the Contractor shall, at its expense, within 5 days after the receipt of notice from the City to do so, furnish an additional bond or bonds, in such form and amount, and with such surety or sureties as shall be satisfactory to the City. In such event no further payment to the Contractor shall be deemed to be due under this Contract until such new or additional security for the faithful performance of the work and the payment of labor and material suppliers shall be furnished in a manner and form satisfactory to the City. The corporate surety on any performance or payment bond must be licensed by the State of Missouri and if the required bond exceeds \$25,000.00 must be listed in United States Treasury Circular 570.

**5. Contractor's responsibility for subcontractors.** The Contractor shall be fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as Contractor is for the acts and omissions of persons it directly employs. Contractor shall cause appropriate provisions to be inserted in all subcontracts relating to this Contract, to bind all subcontractors to Contractor by all the terms herein set forth, and insofar as applicable to the work of subcontractors and to give Contractor the same power regarding termination of any subcontract as the City may exercise over Contractor under any provisions of this contract. Nothing contained in this contract shall create any contractual relation between the subcontractor and the City.

**6. General Independent Contractor Clause.** This Contract does not create an employee/employer relationship between the parties. It is the parties' intention that the Contractor shall be an independent contractor and not the City's employee for all purposes, including, but not limited to, the application of the Fair Labor Standards Act, minimum wage and overtime payments, Federal Insurance Contribution Act, the Social Security Act, the Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, Missouri revenue and taxation laws, Missouri workers' compensation, and unemployment insurance laws. The Contractor shall retain sole and absolute discretion as to the judgment and manner and means of carrying out the Contractor's activities and responsibilities hereunder. The Contractor agrees that it is a separate and independent enterprise from the public employer, that it has a full opportunity to find other business, that it has made its own investment in its business, and that it will utilize a high level of skill necessary to perform the work. This Contract shall not be construed as creating any joint employment relationship between the Contractor and the City, and the City shall not be liable for any obligation incurred by the Contractor, including but not limited to unpaid minimum wages and/or overtime premiums.

**7. Liquidated Damages.** The parties mutually and expressly agree that time of completion of work by the Contractor is of the essence. Should Contractor, or in the case of default, the surety, fail to substantially complete the work within the time specified in this Contract, or within such extra time as may be allowed, Contractor (or surety) shall be liable to the City in the amount of \$500 per day for each and every calendar day that the performance of this Contract remains uncompleted after the time allowed for substantial completion, as liquidated damages, and not as a penalty, it being stipulated that actual damages to the City and the public arising from Contractor's failure to timely complete the work would be difficult, if not impossible, to ascertain. The amount assessed as liquidated damages may be withheld from any moneys otherwise due to Contractor from the City. The project is not considered complete until final acceptance by the City.

**8. Termination.**



**a. For Cause.** The City reserves the right to terminate this Contract by giving at least five days prior written notice to the Contractor, without prejudice to any other rights or remedies of the City should the Contractor be adjudged a bankrupt, or if Contractor should make a general assignment for the benefit of its creditors, or if a receiver should be appointed for Contractor or for any of its property, or if Contractor should persistently or repeatedly refuse or fail to supply enough properly skilled workmen or proper material, or if Contractor should refuse or fail to make prompt payment to any person supplying labor or materials for the work under the contract, or persistently disregard instructions of the City or fail to observe or perform any provisions of the contract.

**b. For Convenience.** The City shall have the right at any time by written notice to Contractor to terminate and cancel this Contract, without cause, for the convenience of the City, and Contractor shall immediately stop work. In such event City shall not be liable to Contractor except for payment for actual work performed prior to such notice in an amount proportionate to the completed contract price and for the actual costs of preparations made by Contractor for the performance of the cancelled portions of the Contract, including a reasonable allowance of profit applicable to the actual work performed and such preparations. Anticipatory profits and consequential damages shall not be recoverable by Contractor.

**9. City's Right to Proceed.** In the event this Contract is terminated, the City may take over the work and prosecute the same to completion, by contract or otherwise, and Contractor and its sureties shall be liable to the City for any costs over the amount of this Contract thereby occasioned by the City. In any such case, the City may take possession of, and utilize in completing the work, such materials, appliances and structures as may be on the work site and are necessary for completion of the work. The foregoing provisions are in addition to, and not in limitation of, the rights of the City under any other provisions of the contract, city ordinances, and state and federal laws.

## **10. Liability and Indemnity.**

**a.** In no event shall the City be liable to the Contractor for special, indirect, or consequential damages, except those caused by the City's gross negligence or willful or wanton misconduct arising out of or in any way connected with a breach of this contract. The maximum liability of the City shall be limited to the amount of money to be paid or received by the Contractor under this contract.

**b.** The Contractor shall defend, indemnify and save harmless the City, its elected or appointed officials, agents and employees from and against any and all liability, suits, damages, costs (including attorney fees), losses, outlays and expenses from claims in any manner caused by, or allegedly caused by, or arising out of, or connected with, this contract, or the work or any subcontract thereunder (the Contractor hereby assuming full responsibility for relations with subcontractors), including, but not limited to, claims for personal injuries, death, property damage, or for damages from the award of this contract to Contractor, notwithstanding any possible negligence, whether sole or concurrent, on the part of the City, its officials, agents and employees.

**c.** The Contractor shall indemnify and hold the City harmless from all wages or overtime compensation due any employees in rendering services pursuant to this Contract or any subcontract, including payment of reasonable attorneys' fees and costs in the defense of any claim made under the Fair Labor Standards Act, the Missouri Prevailing Wage Law or any other federal or state law.



d. The indemnification obligations of Contractor hereunder shall not be limited by any limitations as to the amount or type of damages, compensation or benefits payable by or for the Contractor, under any federal or state law, to any person asserting the claim against City, its elected or appointed officials, agents, and employees, for which indemnification is sought.

e. The indemnification obligations herein shall not negate, abridge or reduce in any way any additional indemnification rights of the City, its elected or appointed officials, agents and employees, which are otherwise available under statute, or in law or equity.

f. Contractor affirms that it has had the opportunity to recover the costs of the liability insurance required in this Contract in its contract price. Contractor's obligation under this Contract to defend, indemnify, and hold harmless any person from that person's own negligence or wrongdoing is limited to the coverage and limits of the applicable insurance required of the Contractor under this Contract.

g. The Contractor shall indemnify and hold the City harmless for any penalties, fines, fees or costs, including costs of defense, which are charged or assessed by any Federal, state or local agency including, but not limited to, Environmental Protection Agency or Department of Natural Resources.

**11. Payment for Labor and Materials.** The Contractor agrees and binds itself to pay for all labor done, and for all the materials used in the construction of the work to be completed pursuant to this contract.

**12. Payment.** Provided that Contractor performs the services in the manner set forth herein, the City shall pay the Contractor in accordance with the rate set forth in Exhibit B, which shall constitute full and complete compensation for the Contractor's work provided hereunder. No partial payment to the Contractor shall operate as approval of acceptance of work done or materials furnished hereunder. Such compensation will be paid in progress payments, as established by the City, subject to receipt of a requisition for payment and a statement of work provided by the Contractor and Contract by both the City and the Contractor that the Contractor has fully performed the work to be paid for in such progress payments in conformance with the contract. It is expressly understood that in no event will the total compensation and reimbursement to be paid to the Contractor under the terms of this Contract exceed the sum of **Two Hundred Sixty-Nine Thousand Eight Hundred Eighteen Dollars and Forty-Two Cents (\$269,818.42)** unless specifically and mutually agreed to in writing by both the City and the Contractor.

**13. Contract Documents.** The entire Contract of the parties shall consist of the following documents:

- a. This Contract
- b. **Exhibit A- Scope of Work**
- c. **Exhibit B- Bid/Rate Sheet**
- d. **Exhibit C- Prevailing Wage Order**

The above listed documents are attached hereto and incorporated by their reference herein as though fully set forth herein. No modification, amendment, or waiver of any of the provisions of this Contract shall be effective unless in writing specifically referring hereto and signed by both parties. This Contract shall also include any Exhibits incorporated by reference in the above-described documents. When any provisions of the Contract Documents conflict, the provisions contained in the Contract shall control



followed by Exhibit A, then Exhibit B, and then Exhibit C.

**14. Conflict of Interest.** Contractor certifies that no member or officer of its firm or corporation is an officer or employee of the City of Nixa, Missouri, or any of its boards or agencies, and further that no officer or employee of the City has any financial interest in this contract which would violate any applicable federal regulations or the provisions of RSMo Section 105.450 et seq.

**15. Assignment.** The Contractor shall not assign any interest in this Contract, and shall not transfer any interest in the same (whether by assignment or novation), without prior written consent of the City, provided, however, that claims for money due or to become due to the Contractor from the City under this Contract may be assigned to a bank, trust company, or other financial institution without such approval. Notice of such assignment or transfer shall be furnished in writing promptly to the City and the bond surety. Any such assignment is expressly subject to all rights and remedies of the City under this Contract, including the right to change or delete activities from the Contract or to terminate the same as provided herein, and no such assignment shall require the City to give any notice to any such assignee of any actions which the City may take under this Contract.

**16. Nondiscrimination.** The Contractor agrees in the performance of this contract not to discriminate on the ground or because of race, creed, color, national origin or ancestry, sex, religion, handicap, age, status as a protected veteran or status as a qualified individual with a disability, or political opinion or affiliation, against any employee of Contractor or applicant for employment and shall include a similar provision in all subcontracts let or awarded hereunder. The parties hereby incorporate the requirements of 41 C.F.R. §§ 60-1.4(a)(7), 29 C.F.R. Part 471, Appendix A to Subpart A, 41 C.F.R. § 60-300.5(a) and 41 C.F.R. § 60-741.5(a), if applicable.

a. This Contractor and subcontractor shall abide by the requirements of 41 C.F.R. § 60-300.5(a). This regulation prohibits discriminations against qualified protected veterans and requires affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans.

b. This Contractor and subcontractor shall abide by the requirements of 41 C.F.R. § 60-741.5(a). This regulation prohibits discrimination against qualified individuals on the basis of disability and requires affirmative action by covered prime Contractors and subcontractors to employ and advance in employment qualified individuals with disabilities.

**17. Nonresident/Foreign Contractors.** The Contractor shall procure and maintain during the life of this Contract:

a. If the Contractor is a foreign corporation, a certificate of authority to transact business in the State of Missouri from the Secretary of State, unless exempt pursuant to the provisions of Section 351.570 RSMo.

b. A certificate from the Missouri Director of Revenue evidencing compliance with the transient employer financial assurance law, unless exempt pursuant to the provisions of Section 285.230 RSMo.

**18. Notices.** All notices required or permitted hereinunder and required to be in writing may be given by electronic transmission or by first class mail addressed to City and Contractor at the addresses shown above. The date of delivery of any notice given by mail shall be the date falling on the second full day after the day of its mailing. The date of delivery of notice by electronic transmission shall be deemed to be the date transmission occurs, except where the transmission is not completed by 5:00



p.m. on a regular business day at the terminal of the receiving party, in which case the date of delivery shall be deemed to fall on the next regular business day for the receiving party.

**19. Right to Audit.** Contractor agrees to furnish sufficient supporting details as may be required by the City to support any charges or invoices submitted to the City for payment under this Contract. Contractor shall make available for the City's inspection all records covering or relating charges submitted to the City for payment. Contractor shall make appropriate adjustments in the event that discrepancies are found. The City shall have the right to audit the Offeror's records pertaining to the work/product for a period of three (3) years after final payment.

**20. Occupational License.** The Contractor shall obtain and maintain an occupational license or business registration with the City of Nixa, Missouri, if required by city code and any required state or federal requirement. The cost for this occupational license shall be borne by the Contractor. No contract will be executed by the City until this occupational license has been obtained.

**21. Safety Training.** Pursuant to Missouri Revised Statute Section 292.675, Contractors and subcontractors who sign a contract to work on public works projects must provide a 10-hour OSHA construction safety program, or similar program approved by the Department of Labor and Industrial Relations, to be completed by their on-site employees within sixty (60) days of beginning work on the construction project. The Contractor shall provide an acceptable notarized affidavit stating that Contractor has verified the completion of a 10-hour constructions safety program with respect to the employees working in connection with the contracted services. Contractors and subcontractors in violation of this provision will forfeit to the public body \$2,500.00 plus \$100 a day for each employee who is employed without training. Public bodies and contractors may withhold assessed penalties from the payment due to those Contractors and subcontractors. The penalties shall not begin to accrue until the time periods in the statute have elapsed (60 days after notice to proceed and 20 days to produce documentation for employee found in violation).

**22. Affidavit for Contracts Over \$5,000.00.** That pursuant to Missouri Revised Statute Sections 285.525 through 285.550, if this contract exceeds the amount of \$5,000.00 and Contractor is associated with a business entity, Contractor shall provide an acceptable notarized affidavit stating that the associated business entity is enrolled in and participates in a federal work authorization program with respect to the employees working in connection with the contracted services, and that said business entity does not knowingly employ any person who is an unauthorized alien in connection with the contracted services. Additionally, Contractor must provide documentation for said business entity evidencing current enrollment in a federal work authorization program.

**23. Affidavit for Compliance with Anti-Discrimination against Israel Act.** Pursuant to Missouri Revised Statute Section 34.600, if this Contract exceeds the amount of \$100,000 for Contractors with ten or more employees, Contractor shall provide an acceptable notarized affidavit stating that the associated business is not currently engaged in and shall not for the duration of the contract, engage in a boycott of goods or services from the State of Israel; is not currently engaged in and shall not, for the duration of the contract, engage in a boycott of goods or services from companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel; or is not currently engaged in and shall not for the duration of this contract, engage in a boycott of goods or services from persons or entities doing business in the state of Israel.

**24. Compliance with Laws.** Contractor agrees to comply with all applicable federal, state and local laws or rules and regulations applicable to the provision of services and products hereunder. Contractor affirmatively states that payment of all local, state, and federal taxes and assessments owed by Contractor is current.



**25. City Benefits.** The Contractor shall not be entitled to any of the benefits established for the employees of the City nor be covered by the Worker's Compensation Program of the City.

**26. Jurisdiction.** This Contract and every question arising hereunder shall be construed or determined according to the laws of the State of Missouri. Should any part of this Contract be litigated, venue shall be proper only in the Circuit Court of Christian County, Missouri.

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IN WITNESS WHEREOF, the Parties have set their hands on the day and year stated herein.

**THE CITY OF NIXA, MISSOURI**

\_\_\_\_\_  
Jimmy Liles, City Administrator

Date: \_\_\_\_\_

**ATTEST:**

\_\_\_\_\_  
Rebekka Coffey, City Clerk

**Approved as to form:**

\_\_\_\_\_  
Nick Woodman, City Attorney

**Director of Finance Certification:**

I certify that this contract is within the purpose of the appropriation to which it is to be charged and that there is an unencumbered balance to the credit of such appropriation sufficient to pay therefore, and that the appropriate accounting entries have been made.

\_\_\_\_\_  
Jennifer Evans, Director of Finance

**CONTRACTOR**

\_\_\_\_\_  
*Eric Hambey*

\_\_\_\_\_  
Eric Hambey  
Printed Name

\_\_\_\_\_  
Manager  
Title

Date: 5/10/23

**ATTEST:**

\_\_\_\_\_  
*Jacob Irvin*

\_\_\_\_\_  
Jacob Irvin  
Printed Name

\_\_\_\_\_  
Operations MGR  
Title



## **SCOPE OF WORK**

The Scope of Work for this project is to construct a metal Training Building and gravel parking area to be located at 972 Old Riverdale Rd. Nixa, MO next to the newly built Firing Range.

Specifications for the project are in Attachment 1, provided. Construction of the project must be followed exactly as stated in these plans.

The gravel parking area must be approximately 30' x 65' to run the width of the training building, and to be located adjacent to the firing range. An overhead view of the range and area for gravel lot to be located is also attached.

Site prep work, and any groundwork for the project shall be completed by the awarded vendor.

The building shall be completed by October 1, 2023.

City staff will monitor and inspect the progress and completion of the project. If any changes or modifications need to be made, the contractor will be required to do so upon request. Payment will not be issued until the project has been approved by City staff.





**PDC**

**PINNACLE DESIGN CONSULTANTS**

CIVIL • STRUCTURAL ENGINEERING  
417-501-8820  
[PINNACLEDC.COM](http://PINNACLEDC.COM)



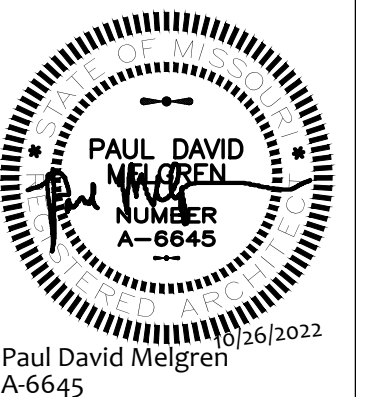
**CROCKER**  
CONSULTING ENGINEERS, INC.  
REGISTERED PROFESSIONAL ENGINEERS

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3211 E. SHADY GLEN ST. | SPRINGFIELD, MO 65804-4794 | 417-883-4056

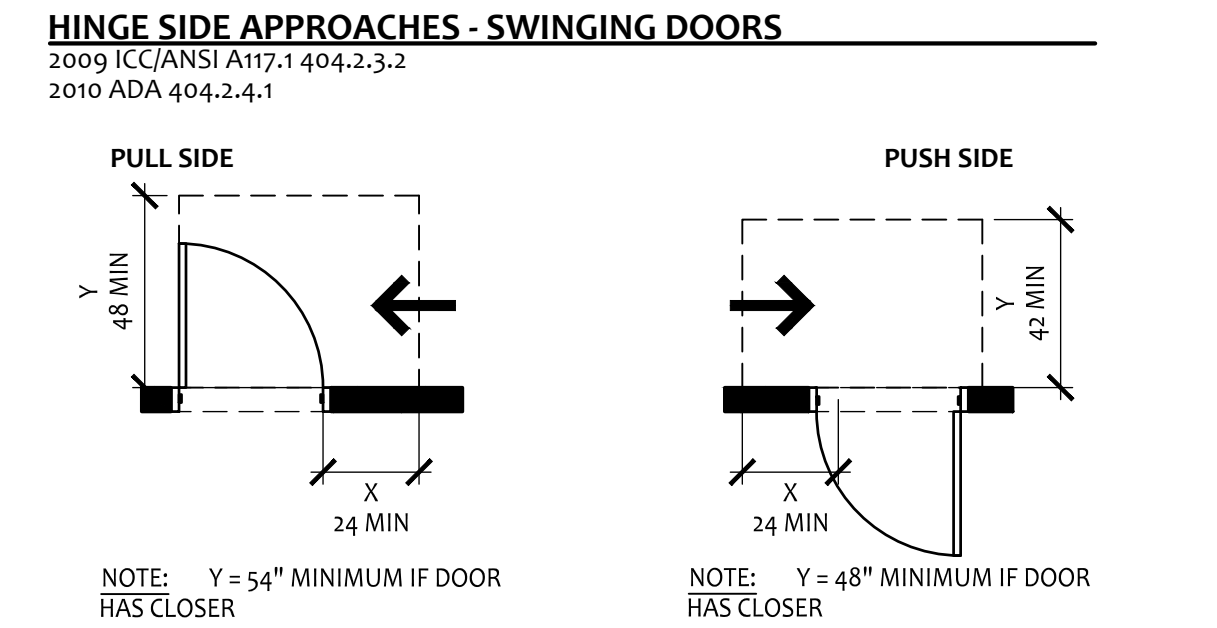
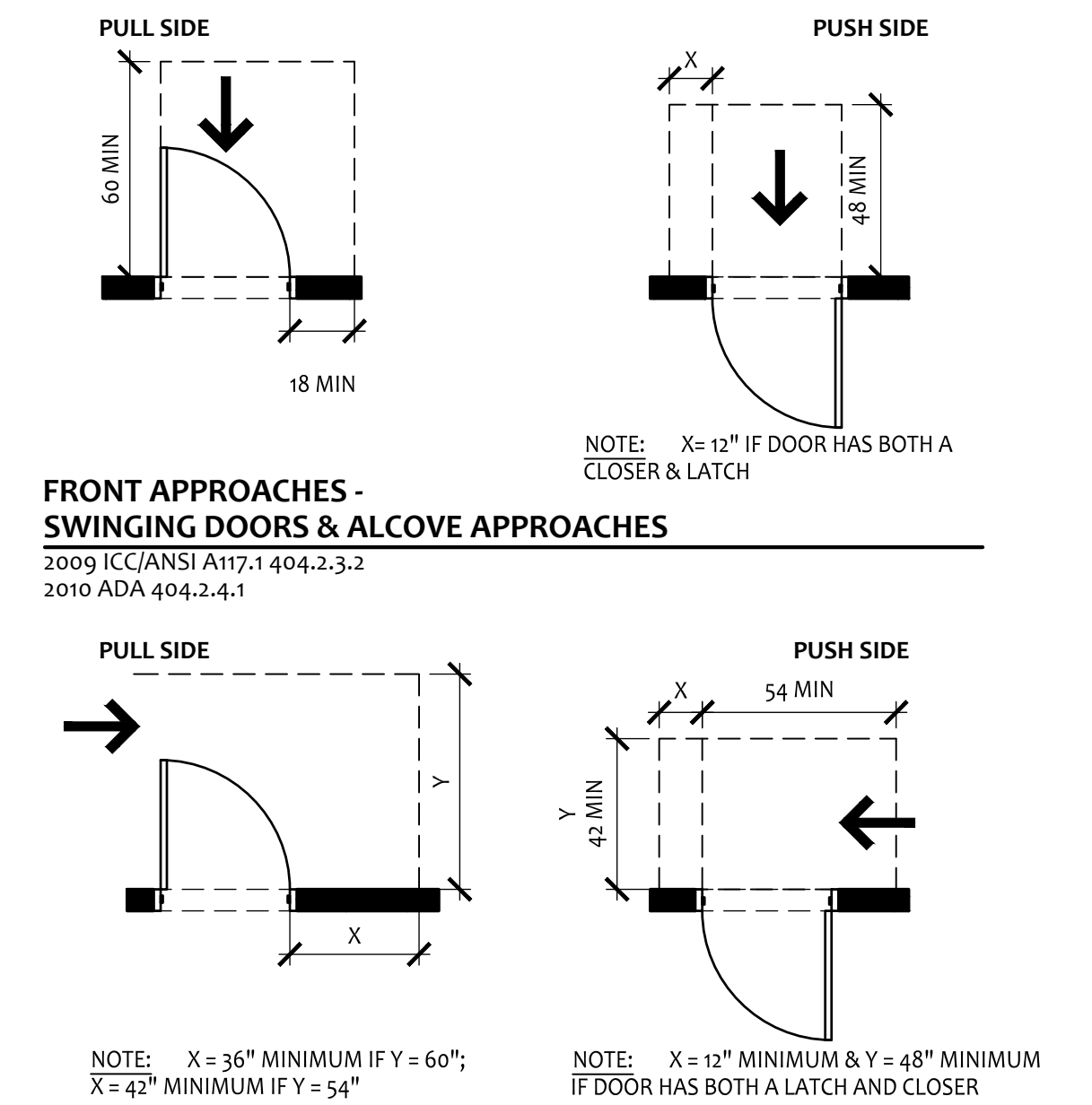
SEE PLANS PREPARED BY SHAFFER & HINES,  
CONSULTING ENGINEERS AND REGISTERED  
LAND SURVEYORS, DATED 3/29/22

Nixa, Christian County, MO 65741





TYPICAL ACCESSIBILITY DETAILS



APPLICABLE CODES

THIS PROJECT SHALL COMPLY WITH THE 2012 ICC CODE SERIES (IEBC, IBC, IFC, IMC, IPC), THE 2011 NATIONAL ELECTRIC CODE, AND CHRISTIAN COUNTY ADOPTED LOCAL ORDINANCES, AS APPLICABLE.

THE DRAWINGS WERE PREPARED TO ILLUSTRATE DESIGN GEOMETRY AND RELEVANT CODE COMPLIANCE PERTAINING TO THE PUBLIC HEALTH, SAFETY, AND WELFARE.

BUILDING CODE SUMMARY

USE GROUP:	304: BUSINESS, 311.1 S-1 MODERATE HAZARD STORAGE, MIXED USE TABLE 508.4, NO SEPARATION REQUIRED BETWEEN B AND S-1
CONSTRUCTION TYPE:	TABLE 601: V-B, COMBUSTIBLE, UNPROTECTED.
ALLOWABLE AREA:	TABLE 503, 9,000 SF FOR B AND S-1. ALLOWABLE HEIGHT, 1 STORY (USE S-1, MOST RESTRICTIVE)
INTERIOR FINISHES:	TABLE 803.9, CLASS C MINIMUM FOR B AND S-1
FIRE EXTINGUISHERS:	SECTION 906, ORDINARY HAZARD, MAXIMUM TRAVEL DISTANCE, 75 FEET, MAXIMUM AREA PER FIRE EXTINGUISHER, 11,250 SF.
OCCUPANCY:	TABLE 1004.1.2, SEE BUILDING CODE PLAN. TOTAL OCCUPANCY 81
EXITS:	TABLE 1015.1, TWO EXITS REQUIRED FROM TRAINING ROOM, ONE EXIT REQUIRED FROM GARAGE.
EXIT ACCESS:	TABLE 1016.2, EXIT ACCESS TRAVEL DISTANCE, 200 FEET MAXIMUM, TABLE 1014.3, COMMON PATH OF EGRESS TRAVEL, 75 FEET FOR B AND S-1
REQUIRED PLUMBING FIXTURES:	TABLE 2902.1 (A-3 LECTURE HALL) 1 WC PER 125 MALE, 1 WC PER 65 FEMALE. 75 TOTAL, ~38 MALE / 125 = 0.3 WC MALE, 37 FEMALE / 65 = 0.57 WC FEMALE. S-1 = 5 / 100 = .05 WC. TOTAL REQUIRED WC = 0.33 MALE ~ 1 WC, 0.60 FEMALE ~ 1 WC REQUIRED LAVATORY: B = 75 / 200 = 0.38, S-1 = 5 / 100 = .05, TOTAL LAV REQUIRED = 0.43 ~ 1. REQUIRED SERVICE SINKS = 1 REQUIRED DRINKING FOUNTAIN = 83 / 1000 = 0.08 ~ 1. BOTTLED WATER PROVIDED IN LIEU OF DRINKING FOUNTAIN

BUILDING CODE PLAN - 2400 SF

KNOX BOX - LOCATE AS DIRECTED BY NIXA FIRE DEPARTMENT

OCCUPANCY LEGEND

2,000 SF	ROOM SQUARE FOOTAGE
3	ASSEMBLY AREA, UNCONCENTRATED 15 SF PER PERSON NET
3	ACCESSORY STORAGE / MECHANICAL EQUIPMENT ROOMS 300 SF PER PERSON GROSS
180	EXIT CAPACITY (BASED ON WIDTH)
20	OCCUPANTS USING EXIT BASED ON OCCUPANCY PLAN
←	EXIT OR EXIT ACCESS
🔥	APPROXIMATE LOCATION OF PORTABLE FIRE EXTINGUISHER. DASHED CIRCLE INDICATES 75'-0" TRAVEL DISTANCE.
OCCUPANCY TOTALS:	81 PERSONS PER IBC TABLE 1004.1.2

SECTION & DETAIL MATERIAL SYMBOLS

	RIGID INSULATION
	BATT INSULATION
	GYPSUM BOARD
	PLYWOOD
	PARTICLE BD. (GLASS AT LARGE SCALE)
	METAL OR GLASS (AT SMALL SCALE)
	WOOD, FINISHED
	WOOD, ROUGH, CONTINUOUS
	WOOD, ROUGH, BLOCKING

WALL SYMBOLS

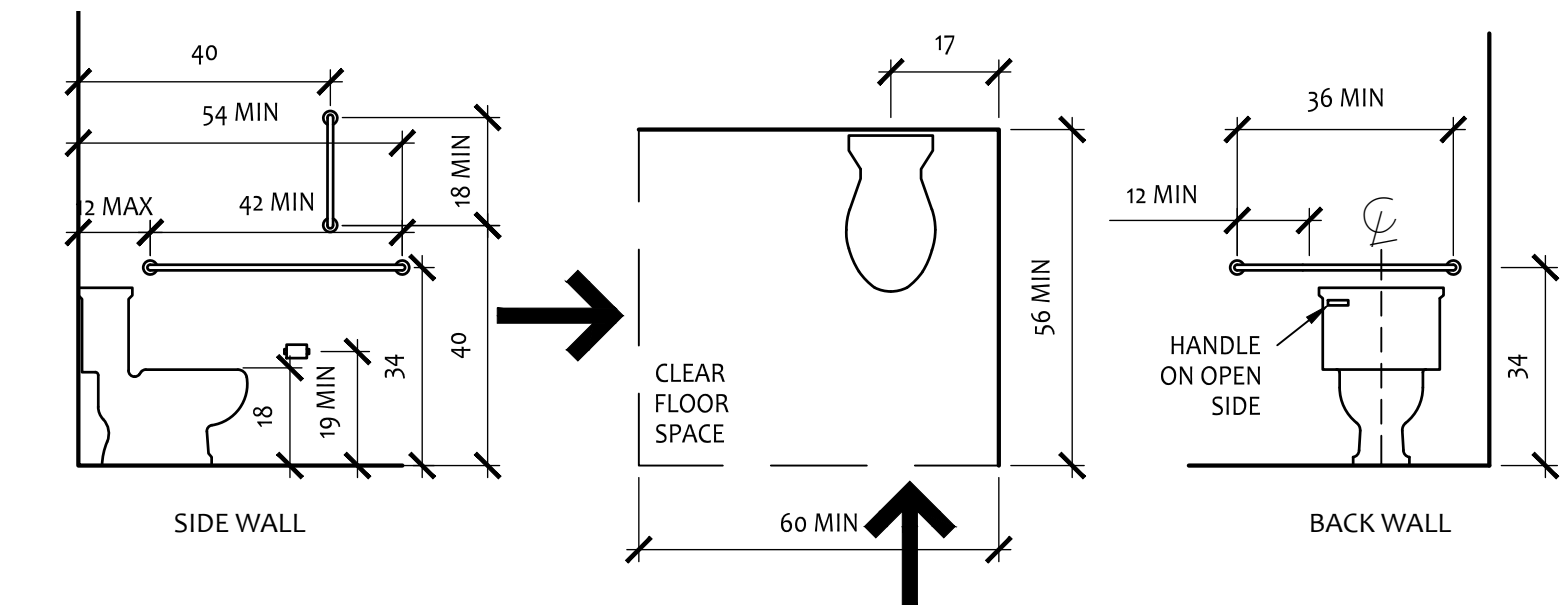
	WOOD OR METAL FRAME WALLS
	CMU (CONCRETE MASONRY UNITS)

REFERENCE SYMBOLS

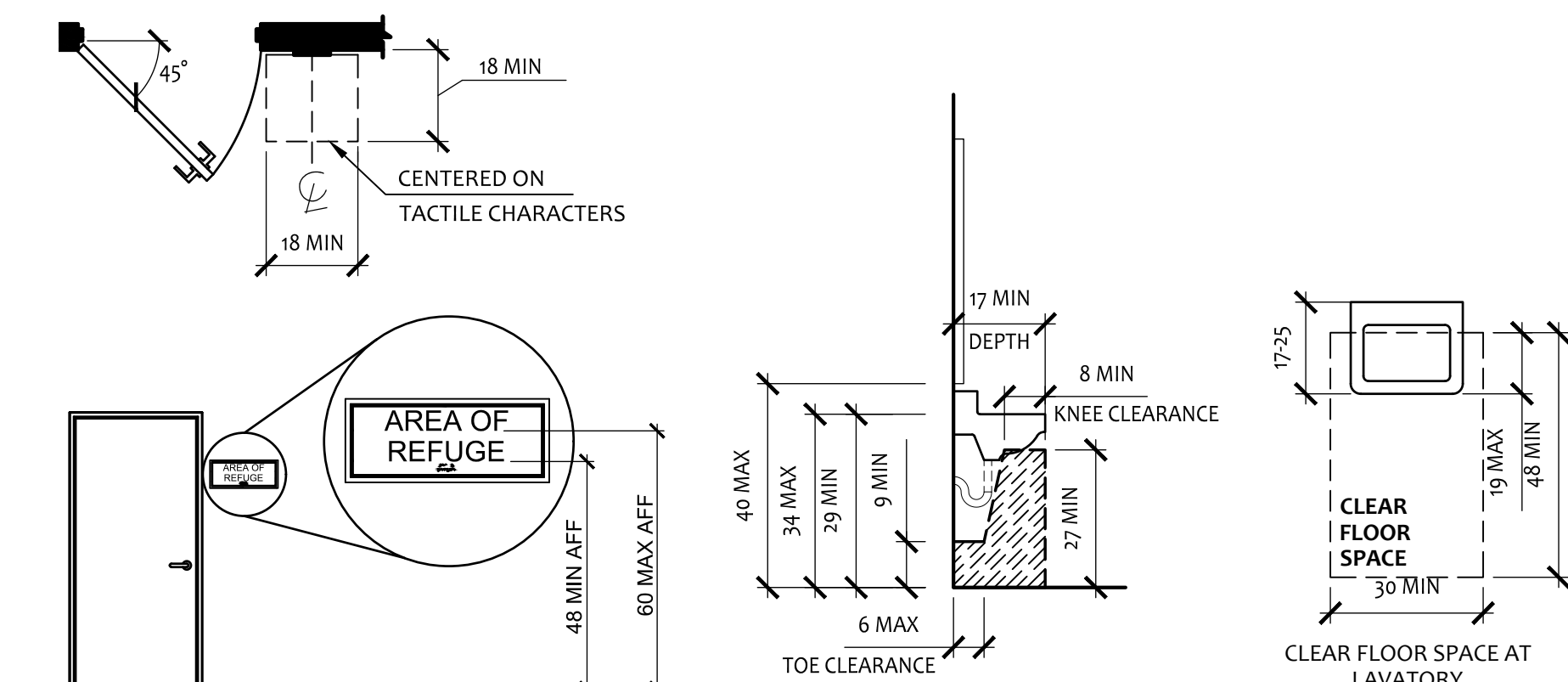
	DETAIL MARK DETAIL NUMBER ON TOP, SHEET NUMBER ON BOTTOM
	BUILDING SECTION
	WALL SECTION
	ELEVATION MARK
	GENERAL NOTES BY LETTER
	KEYED NOTES BY NUMBER
	GRID NOTATION
	LEVEL ELEVATION WORK, CONTROL, OR DATUM POINTS
	INTERIOR PARTITION TYPE SEE SCHEDULE
	DOOR TAG: LETTER FOR SPECIFIC DOOR 3-DIGIT ROOM NUMBER SEE DOOR SCHEDULE
	FRAMES (WINDOWS, LOUVERS, STORE FRONTS, ETC.) SEE SCHEDULE, ALSO SEE PLANS & INTERIOR ELEVATIONS
	MISCELLANEOUS ITEMS DETAIL KEY SEE SCHEDULE
	ROOM NAME ROOM NUMBER ROOM SQUARE FOOTAGE
	NEW DOORS & FRAMES
	DEMO DOORS & FRAMES
	EXISTING DOORS & FRAMES

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	FOF	FACE OF FINISH	OPH	OPPOSITE HAND
A/C	AIR CONDITIONING	FO	FACE OF	OD	OUTSIDE DIAMETER
ALT	ALTERNATE	FOM	FACE OF MASONRY	OO	OUT TO OUT
AL	ALUMINUM	FOS	FACE OF STUDS	OA	OVERALL
ALUM	ALUMINUM	FIN	FINISH(ED)	OH	OVERHEAD
AB	ANCHOR BOLT	FEE	FINISHED FLOOR ELEV.	PC	PIECE
ARCH	ARCHITECT-(URAL)	FFL	FINISHED FLOOR LINE	PENG	PRE-ENGINEERED METAL BUILDING
BSMT	BASEMENT	FE	FIRE EXTINGUISHER	PKG	PARKING
BRG	BEARING	FEC	FIRE EXTINGUISHER CABINET	PLAM	PLASTIC LAMINATE
BM	BENCH MARK	FT	FIRE TREATED	PL	PLATE
BEL	BELOW	FLR	FLOOR	PWD	PLYWOOD
BLK	BLOCK	FD	FLOOR DRAIN	PVC	POLYVINYL CHLORIDE
BLKG	BLOCKING	FTG	FOOTING	PSF	POUNDS PER SQUARE FT.
BD	BOARD	FDN	FOUNDATION	PSI	POUNDS PER SQUARE IN.
BW	BOTH WAYS	FNDN	FOUNDATION	PT	PRESSURE TREATED
BOT	BOTTOM	FUR	FURRED / FURRING	PL	PROPERTY LINE
BF	BOTTOM OF FOOTING	GA	GAGE, GAUGE	REM	REMOVE
BOF	BOTTOM OF FOOTING	GALV	GALVANIZED	RET	RETURN
BRK	BRICK	GC	GENERAL CONTRACT-(OR)	RH	RIGHT HAND
BLDG	BUILDING	GL	GLASS, GLAZING	RD	ROOF DRAIN
BUR	BUILT-UP ROOFING	GYP	GYPSUM	RFG	ROOFING
CAB	CABINET	GWB	GYPSUM WALL BOARD	RM	ROOM
CLG	CEILING	HTG	HEATING	RO	ROUGH OPENING
CL	CENTER LINE	HVAC	HEATING/VENTILATING/ AIR CONDITIONING	SNT	SEALANT
C/O	CENTER OF	HT	HEIGHT	SLNT	SEALANT
CC	CENTER TO CENTER	HC	HOLLOW CORE	SECT	SECTION
CLR	CLEAR	HM	HOLLOW METAL	SEC	SECTION
COL	COLUMN	HORIZ	HORIZONTAL	SHTHG	SHEATHING
CONC	CONCRETE	HB	HOSE BIBB	SHT	SHEET
CMU	CONCRETE MASONRY UNIT	INS	INSULATE (D), (ION)	SIM	SIMILAR
CONST	CONSTRUCTION	INSUL	INSULATE	SC	SOLID CORE
CONTR	CONTRACTOR	INT	INTERIOR	S	SOUTH
CNTR	COUNTER	JST	JOIST	SF	SQUARE FOOT
CFL	COUNTER FLASHING	JT	JOINT	SY	SQUARE INCH
CISK	COUNTERSUNK	KIT	KITCHEN	STD	STANDARD
CRS	COURSE (S)	KJT	JOINT	STO	STORAGE
CF	CUBIC FOOT	LH	LEFT HAND	SUS	SUSPENDED
CY	CUBIC YARD	LF	LINEAR FOOT	SYM	SYMMETRY (ICAL)
DL	DEAD LOAD	LINTEL	LINEAR FOOT	TEL	TELEPHONE
DEM	DEMOLISH, DEMOLITION	LL	LIVE LOAD	TV	TELEVISION
DTL	DETAIL	MACH	MACHINE	THK	THICK (NESS)
DIAG	DIAGONAL	M	METER (S)	TBG	TONGUE & GROOVE
DIAM	DIAMETER	MFR	MANUFACTURER	TM	TOP OF MASONRY
DIM	DIMENSION	MAS	MASONRY	TOM	TOP OF MASONRY
DR	DOOR	MO	MASONRY OPENING	TOS	TOP OF STEEL
DS	DOWN SPOUT	MAX	MAXIMUM	TW	TOP OF WALL
D	DRAIN	MECH	MECHANIC-(AL)	TOW	TOP OF WALL
DWG	DRAWING	MED	MEDIUM	TYP	TYPICAL
DF	DRINKING FOUNTAIN	MBR	MODIFIED BITUMEN	UON	UNLESS OTHERWISE NOTED
E	EAST	MET	METAL	UNO	UNLESS NOTED OTHERWISE
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM	M	METER (S)	VERT	VERTICAL
ELEC	ELECTRIC (AL)	MWK	MILLWORK	VT	VINYL TILE
EW	ELECTRIC WATER COOLER	MIN	MINIMUM	WC	WATER CLOSET
EL	ELEVATION	MISC	MISCELLANEOUS	W	WEST
ELEV	ELEVATION	MISC	MISCELLANEOUS	W	WIDTH, WIDE
EMER	EMERGENCY	MOUNT(ED), (ING)	MOUNT(ED), (ING)	WIN	WINDOW
EQ	EQUAL	NOM	NOMINAL	W	WITH
EXG	EXISTING	N	NORTH	WO	WITHOUT
EXIST	EXISTING	NTS	NOT IN CONTRACT	W/O	WITHOUT
EXP	EXPOSED	OC	ON CENTER (S)	WD	WOOD
EXT	EXTERIOR	OPG	OPENING		



**WATER CLOSET CLEARANCE & GRAB BARS**  
2009 ICC/ANSI A117.1 604.3 & 604.5 (MAY BE MIRRORRED ON PLANS)  
2010 ADA 604.3 & 604.5



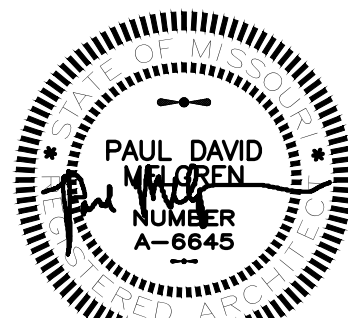
**SIGNS**  
2009 ICC/ANSI A117.1 703  
2010 ADA 703

**LAVATORY SINK CLEARANCE**  
2009 ICC/ANSI A117.1 306 & 606  
2010 ADA 306 & 606



New Training Building  
Nixa Police Department Shooting Range  
Nixa, Christian County, MO 65741

City of Nixa, Missouri  
Nixa, Christian County, MO 65741



Paul David Melgren  
A-6645

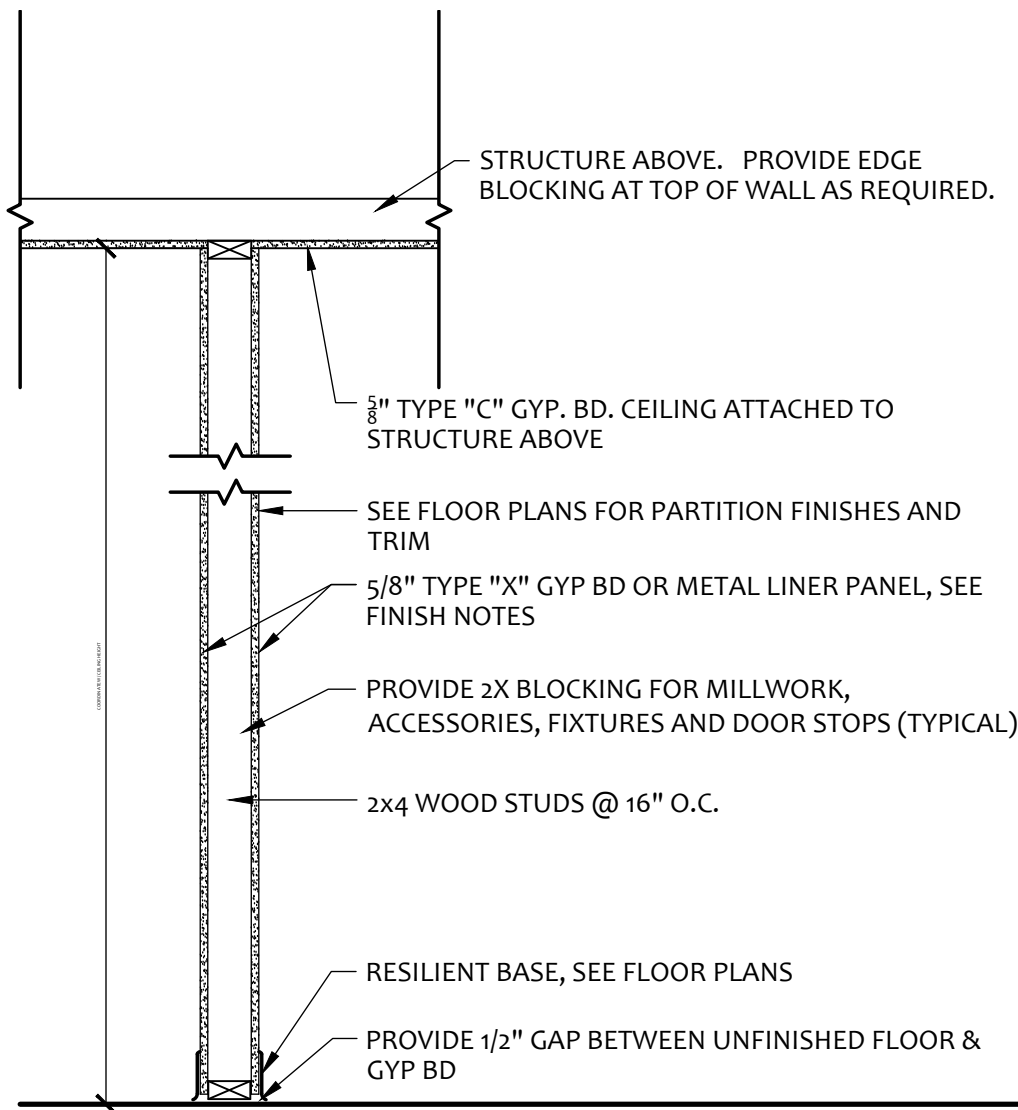
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COA Architecture: 000354  
COA Engineering: 000657

Project Number: 22-585.00  
Date: OCTOBER 26, 2022

Code & Legends

G1.1





- WS4** PARTITION: 3-1/2" WOOD STUD
- WS6** PARTITION: 5-1/2" WOOD STUD  
SAME AS "WS4" EXCEPT 2x6 FRAMING
- WS4I** PARTITION: 3-1/2" WOOD STUD  
SAME AS "WS4" EXCEPT WITH BATT INSULATION
- WS6I** PARTITION: 5-1/2" WOOD STUD  
SAME AS "WS6" EXCEPT WITH BATT INSULATION

PROVIDE MOISTURE RESISTANT GYPSUM BOARD ON WALLS WITH PLUMBING FIXTURES.

## PARTITION TYPES

**PARTITION LEGEND**

**M S 6 R**

MATERIAL TYPE  
IF EXISTS, EXTEND TO  
STRUCTURE

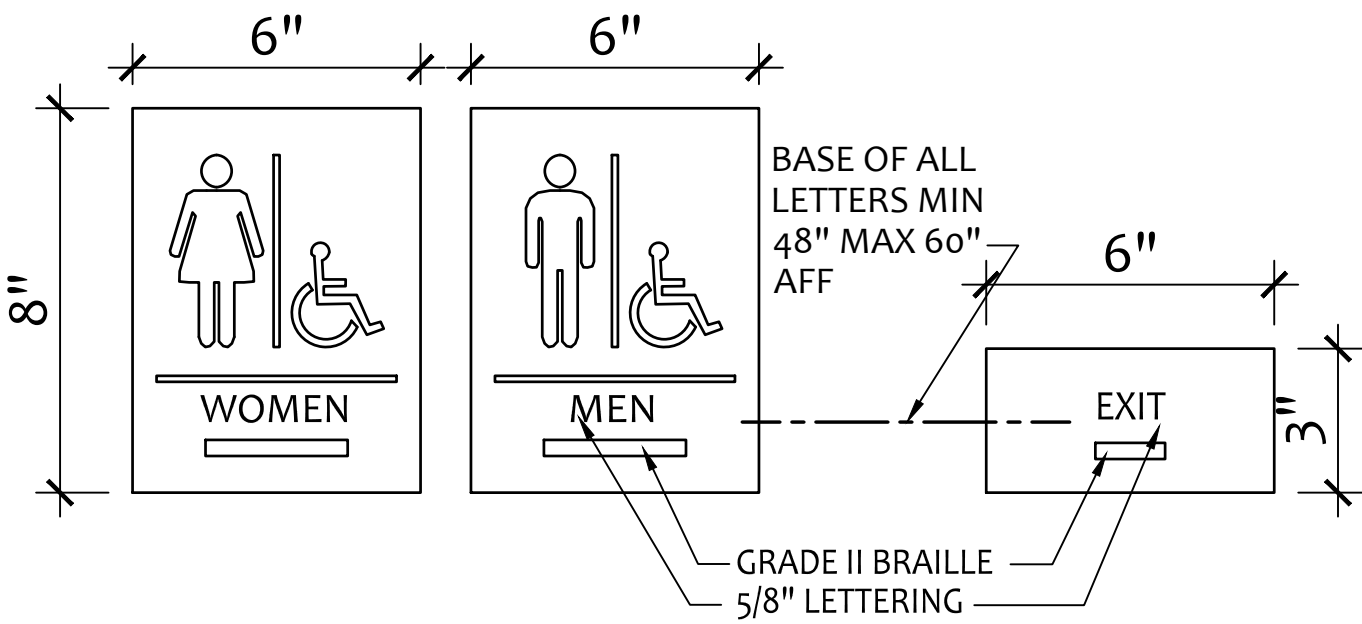
INFORMATIONAL  
NOMINAL STUD WIDTH

**MATERIAL TYPES**

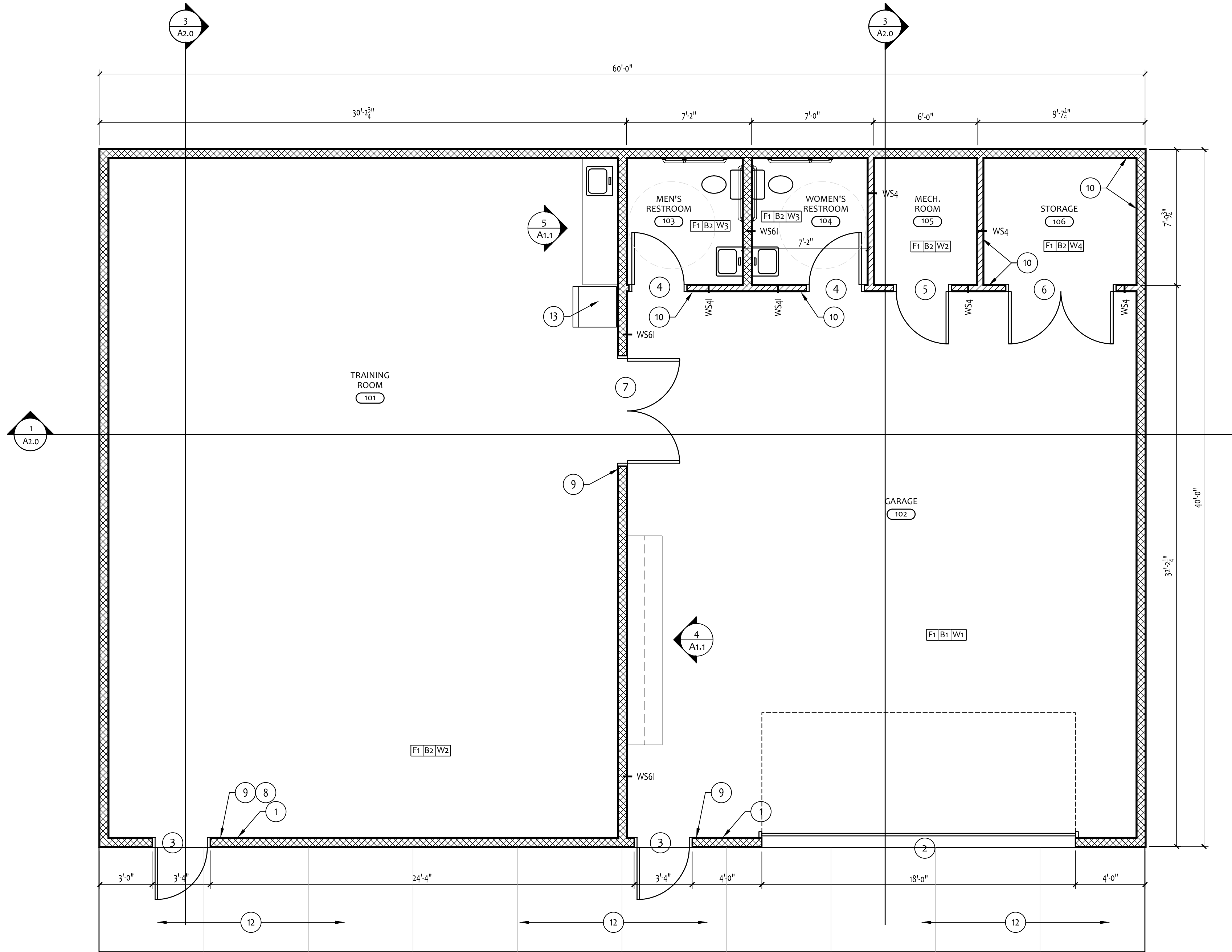
M = METAL  
W = WOOD  
C = CMU

**INFORMATIONAL**

I = INSULATED  
O = ONESIDE  
T = TILE  
R = FIRE RATED  
L = LAMINATE  
P = PARTIAL HEIGHT



3 TYPICAL SIGN DETAILS



1 FLOOR PLAN

**FINISH LEGEND**

**F1 B1 W1** = ROOM FINISH KEY - TYPICAL FINISHES FOR ROOM WHERE LOCATED. EXCEPTION - WHERE SPECIFIC KEY SHOWS OTHERWISE, SUCH AS ACCENT WALLS, TRIM, ETC.

**FLOORS:**

**F1** SEALED CONCRETE

**BASE:**

**B1** 4" RESILIENT BASE ON LINER PANEL

**B2** 4" RESILIENT WALL BASE

**WALLS:**

**W1** LINER PANEL

**W2** PAINTED GYP. BD.

**W3** EPOXY PAINTED GYP. BD. PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT PLUMBING WALLS

**W4** PAINTED OSB

**ACCESSORIES:**

**A0** NONE

**KEYED NOTES:**

1 WALL MOUNTED FIRE EXTINGUISHER

2 18'-0" X 8'-0" INSULATED STEEL OVERHEAD DOOR, PROVIDE MOTOR OPERATOR

3 3'-0" X 7'-0" PAINTED HOLLOW METAL DOOR AND FRAME. PROVIDE PANIC HARDWARE WITH ENTRY FUNCTION, AND CLOSER. PROVIDE DRIP RAIL AT TOP OF DOOR, THRESHOLD AND WEATHERSTRIPPING

4 3'-0"x7'-0" PAINTED HOLLOW METAL DOOR WITH WEATHERSTRIPPING, PRIVACY LOCK, CLOSER AND WALL STOP.

5 3'-0"x7'-0" PAINTED HOLLOW METAL DOOR WITH STOREROOM FUNCTION LOCK AND WALL STOP.

6 (PAIR) 3'-0"x7'-0" PAINTED HOLLOW METAL DOOR WITH STOREROOM FUNCTION LOCK ON ACTIVE LEAF AND SURFACE BOLTS ON INACTIVE LEAF, PROVIDE WALL STOPS.

7 (PAIR) 3'-0"x7'-0" PAINTED HOLLOW METAL DOOR WITH SURFACE ROD PANIC HARDWARE ON EACH LEAF, CLOSERS AND WALL STOPS.

8 INSTALL SIGN READING: "MAXIMUM OCCUPANCY 75"

9 INSTALL TACTILE EXIT SIGN, SEE A1.1 FOR MORE INFORMATION

10 INSTALL RESTROOM SIGN, SEE A1.1 FOR MORE INFORMATION.

11 PROVIDE 1" OSB ON STORAGE ROOM SIDE OF WALL INSTEAD OF 3/8" GYP. BD.

12 6'-0" WIDE X 4" THICK MIN. CONCRETE STOOP WITH CONTROL JOINTS AT 6'-0" O.C. SLOPE AWAY FROM BUILDING AT 1/4" PER 12"

13 REFRIGERATOR - NIC, PROVIDE ICEMAKER BOX IN WALL

**GENERAL NOTES:**

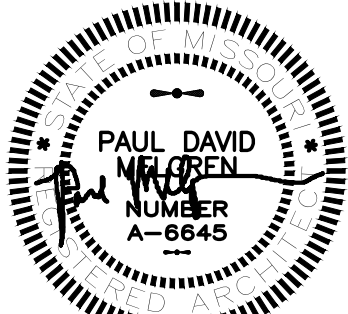
A DIMENSIONING: TYPICAL WALL LAYOUT DIMENSIONS ARE TO FACE OF STUD. REFER TO WALL TYPES FOR FINISHED PARTITION THICKNESS AND PARTITION ASSEMBLY.

B KEY NOTES MAY NOT REPEAT FOR EVERY SPECIFIC LOCATION THEY REFER TO. KEY NOTES SHALL APPLY FOR EVERY SIMILAR CONDITION AS GRAPHICALLY INDICATED BY THE DRAWING.

C INSTALL SOLID BLOCKING IN WALL FOR ALL WALL MOUNTED ITEMS. VERIFY WITH OWNER FOR REQUIRED BLOCKING AT OWNER PROVIDED ITEMS.

D SEE STRUCTURAL FOR TOP OF WALL ELEVATIONS ON LOAD BEARING WALLS

E ALL DOORS SHALL HAVE LEVER HANDLE HARDWARE THAT IS COMPLIANT WITH ICC A117.1



Paul David Melgren  
A-6645

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COA Architecture: 000354  
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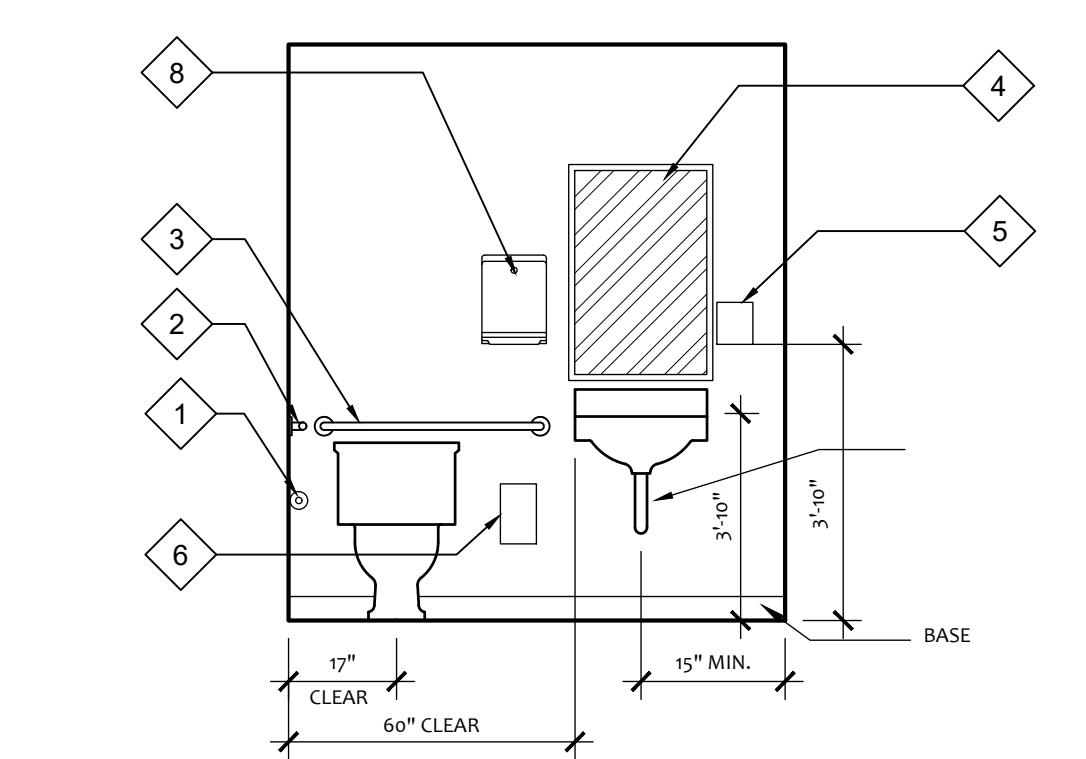
Floor Plan &  
Notes

A1.0

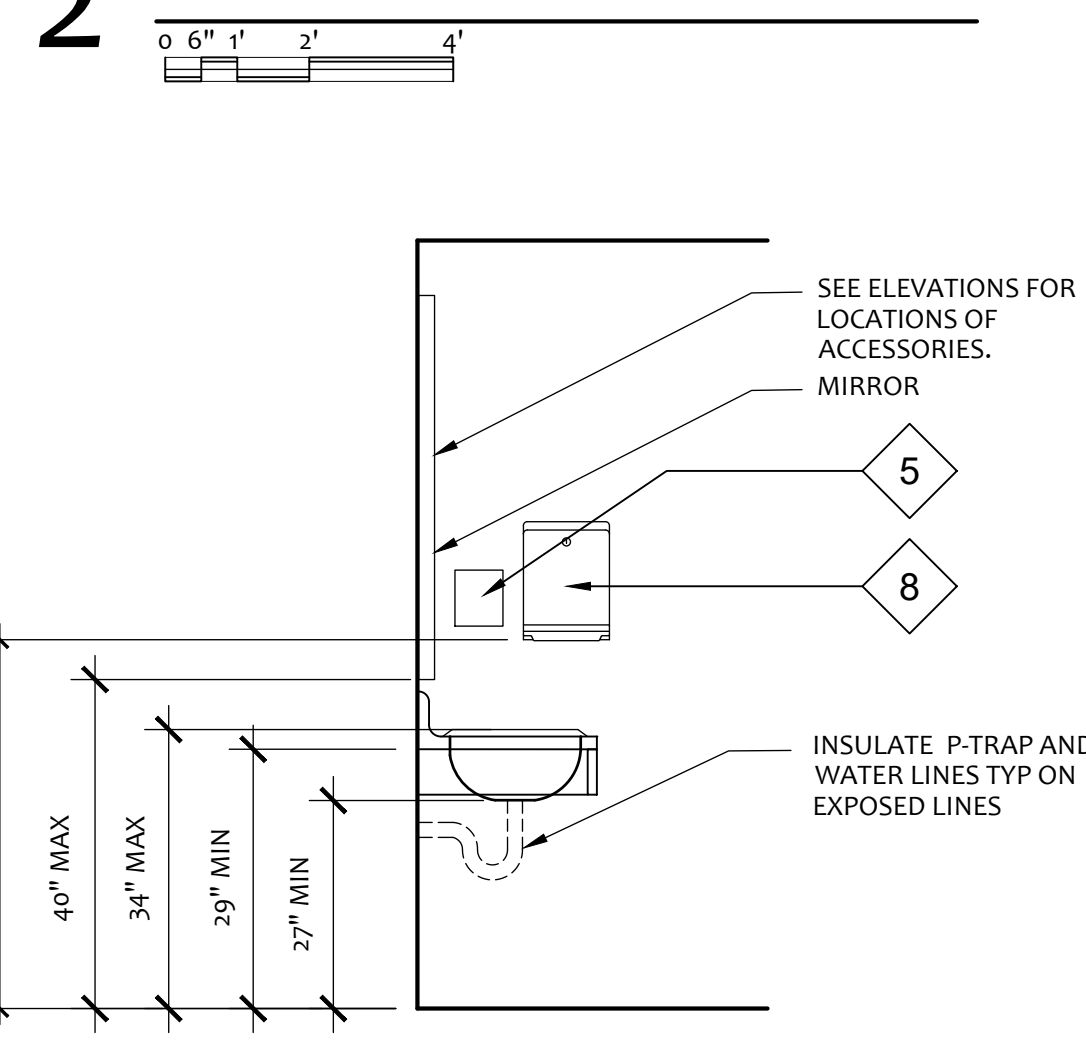


## TOILET & BATH ACCESSORIES

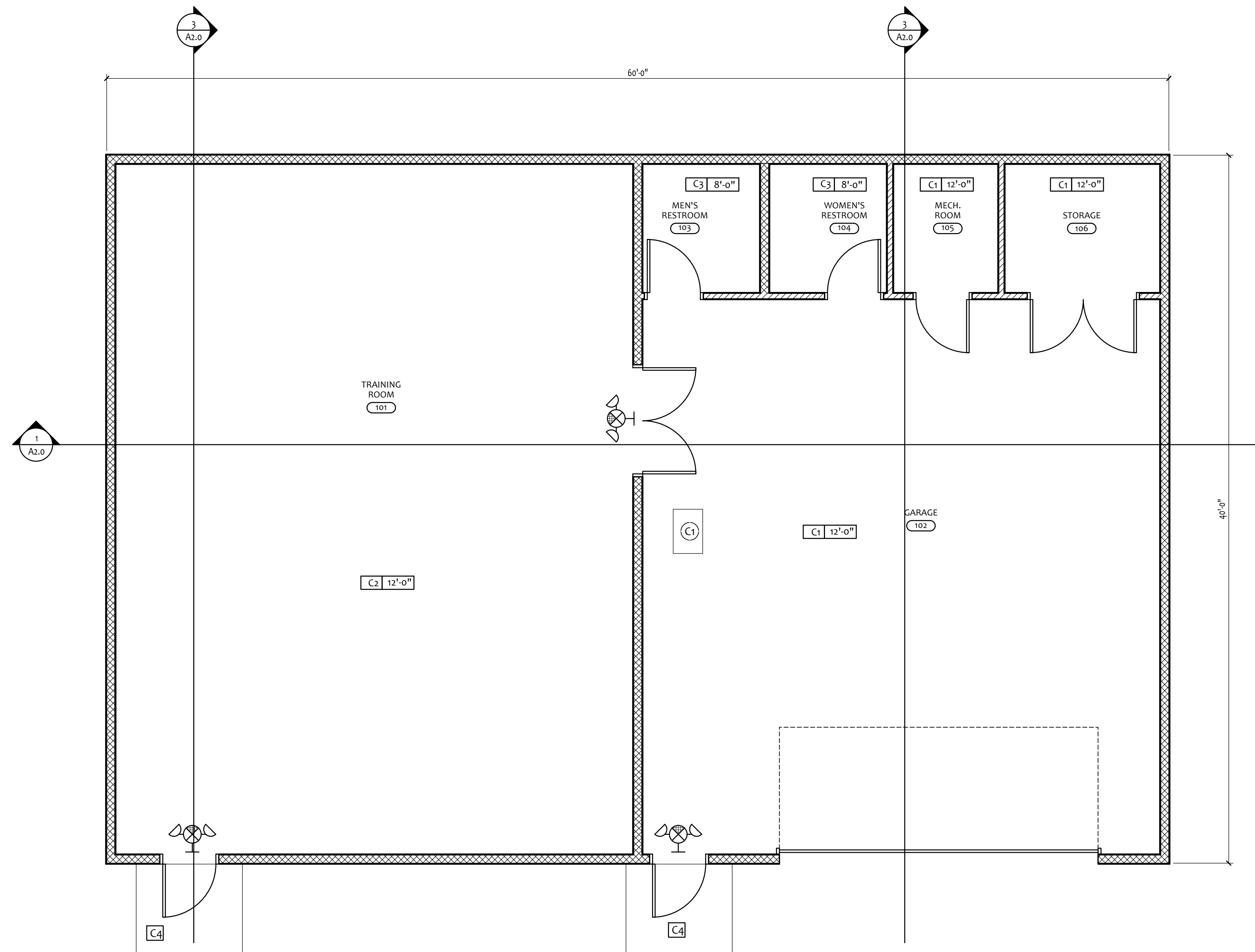
- NOTE: PROVIDE SOLID BLOCKING AT ALL GRAB BAR AND ACCESSORY LOCATIONS
- 1 TOILET PAPER DISPENSER - TYP AT EACH TOILET (PF-8)
- 2 SIDEWALL: GRAB BAR 48" LONG AND 18" LONG VERTICAL
- 3 REAR WALL: GRAB BAR 36" LONG
- 4 24"W x 36"H FRAMED MIRROR
- 5 WALL MOUNTED, AUTOMATIC FOAM SOAP DISPENSER
- 6 SANITARY NAPKIN DISPOSAL - TYP. AT EACH WOMEN'S TOILET
- 7 BABY CHANGING STATION
- 8 WALL MOUNTED PAPER TOWEL DISPENSER
- 9 ADA COMPLIANT SHOWER STALL, GRAB BARS AND SEAT
- TYPICAL SIDE WALL AT ALL WATER CLOSETS UNLESS NOTED OTHERWISE
- 6" MAX. (SET AT 6" EXACT WHERE SPACE PERMITS)
- SEE ELEVATIONS FOR LOCATIONS OF ACCESSORIES, MIRROR
- INSULATE P-TRAP AND WATER LINES TYP ON EXPOSED LINES



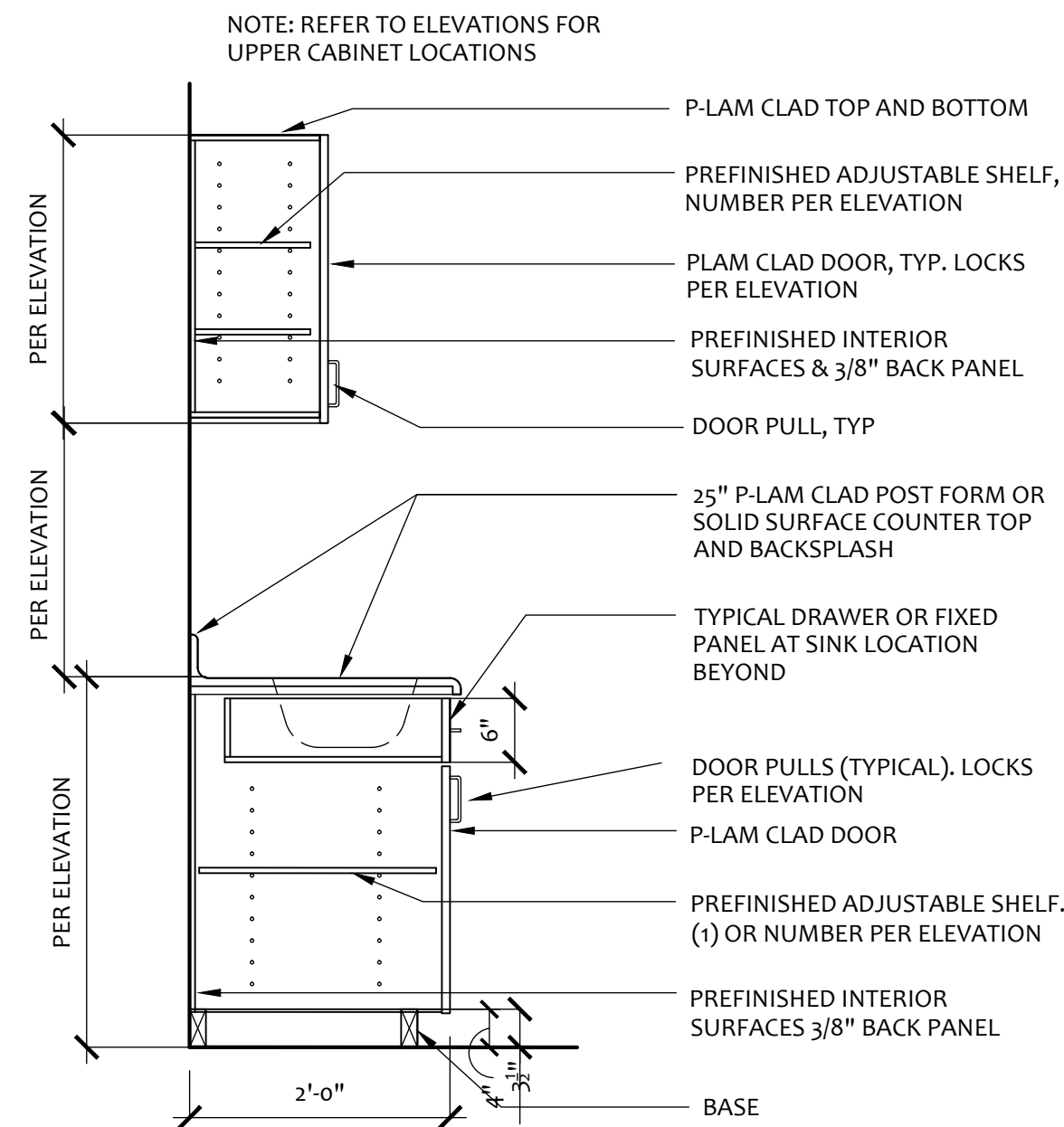
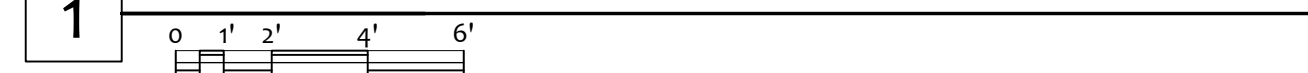
### DETAIL ELEVATION TYPICAL RESTROOM



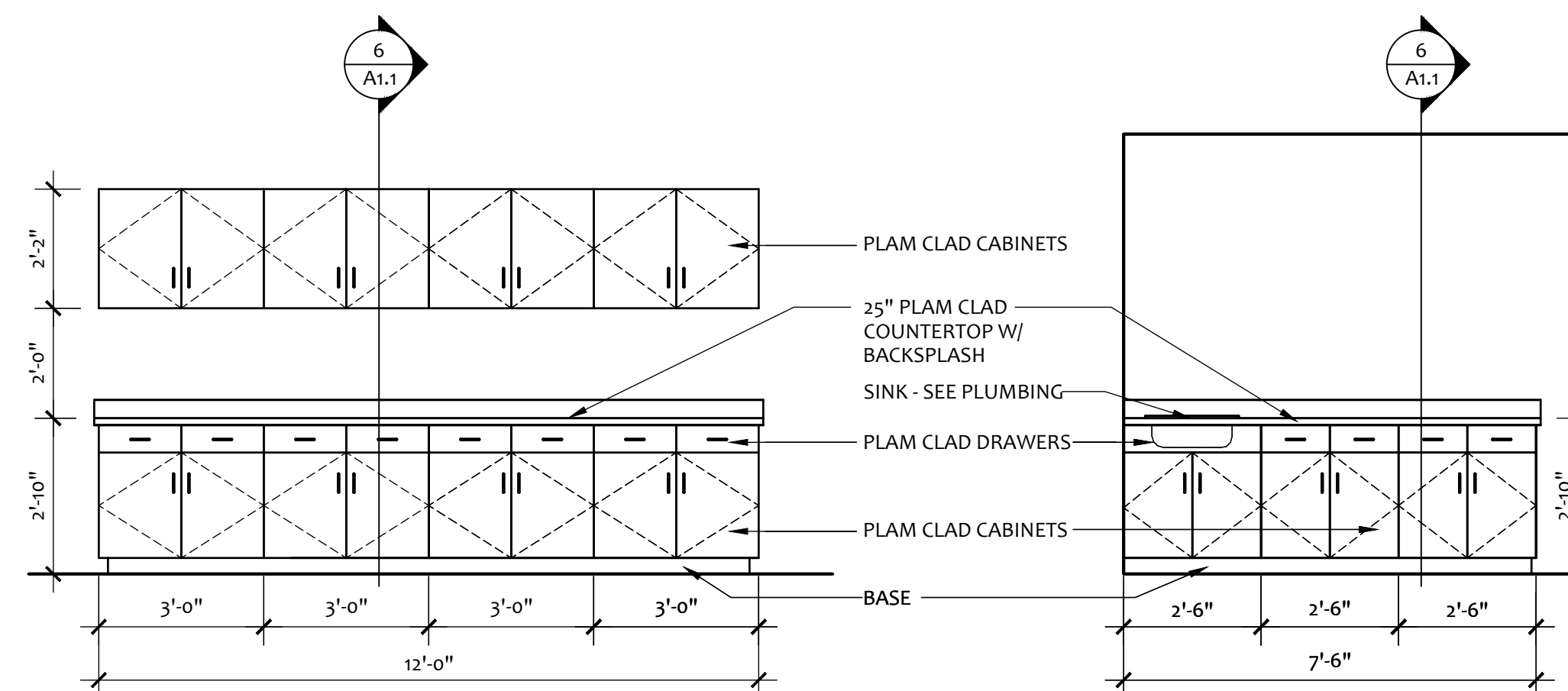
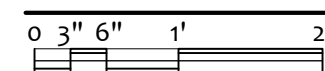
### DETAIL SECTION TYPICAL RESTROOM



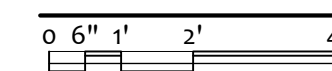
## REFLECTED CEILING PLAN



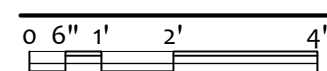
## 6 CABINET SECTION



## 4 MILLWORK ELEVATION



## 5 MILLWORK ELEVATION



### GENERAL CEILING NOTES

- (A) INFORMATION ON THIS SHEET GOVERNS THE LAYOUT OF THE CEILING GRID. SEE MECHANICAL AND ELECTRICAL SHEETS FOR FIXTURE TYPES, QUANTITIES, CIRCUIT, DUCTING, AND SCHEDULING
- (B) EXISTING LIGHT FIXTURE, GRILLES, DIFFUSERS, ACCESS PANELS, ETC ARE NOT SHOWN. ONLY NEW ITEMS ARE SHOWN.

### CEILING TYPES

- C1 PREFINISHED METAL LINER PANELS ATTACHED TO BOTTOM CHORD OF TRUSS
- C2 PAINTED GYPSUM BOARD ON BOTTOM CHORD OF TRUSS. LIGHT ORANGE PEEL TEXTURE
- C3 EPOXY PAINTED GYPSUM BOARD ON WOOD OR METAL FRAMING
- C4 PREMANUFACTURED CANOPY

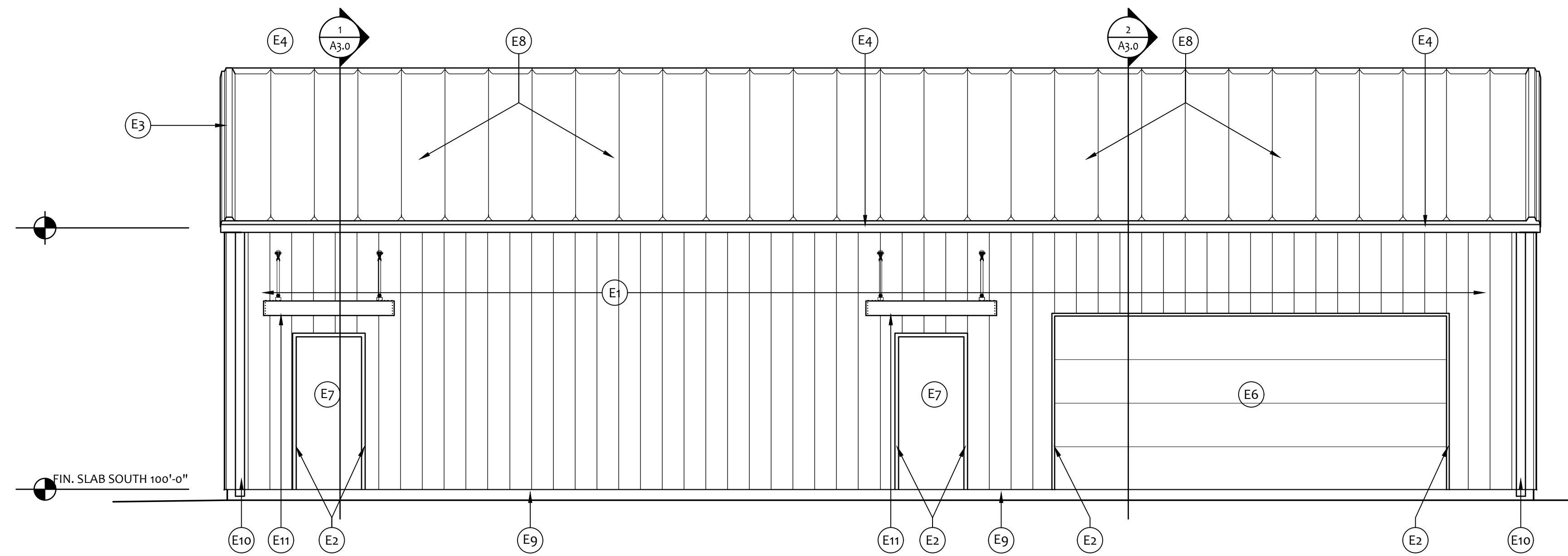
### KEYED CEILING NOTES

- C1 20"X30" MIN. ATTIC ACCESS PANEL

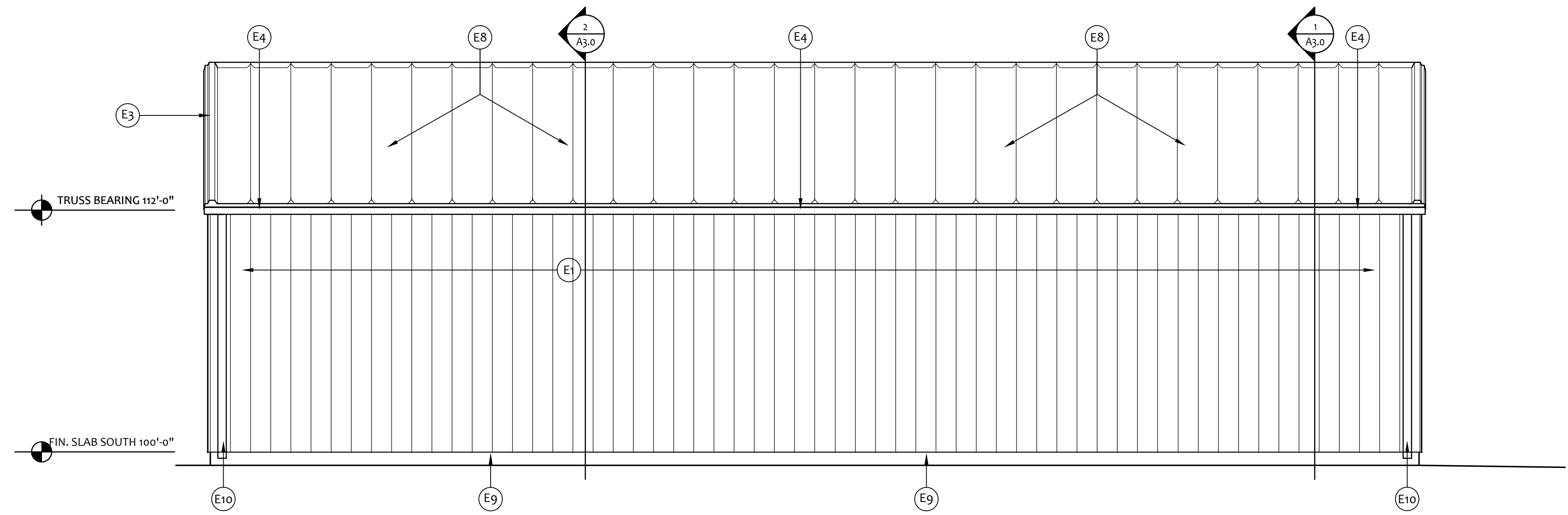
### CEILING LEGEND

- 2X4 FLUORESCENT RECESSED LIGHT FIXTURE
- CEILING FAN
- WALL MOUNTED EXTERIOR FIXTURE
- RECESSED DOWNLIGHT
- FLUORESCENT STRIP FIXTURE
- TRACK LIGHTING
- LED COVE LIGHTING
- RETURN AIR
- SUPPLY AIR
- WALL MOUNTED EMERGENCY FIXTURE
- CEILING MOUNTED EMERGENCY FIXTURE
- WALL MOUNTED EMERGENCY/EXIT FIXTURE
- WALL MOUNTED EXIT FIXTURE
- CEILING TYPE
- CEILING HEIGHT
- C1 7'-11"

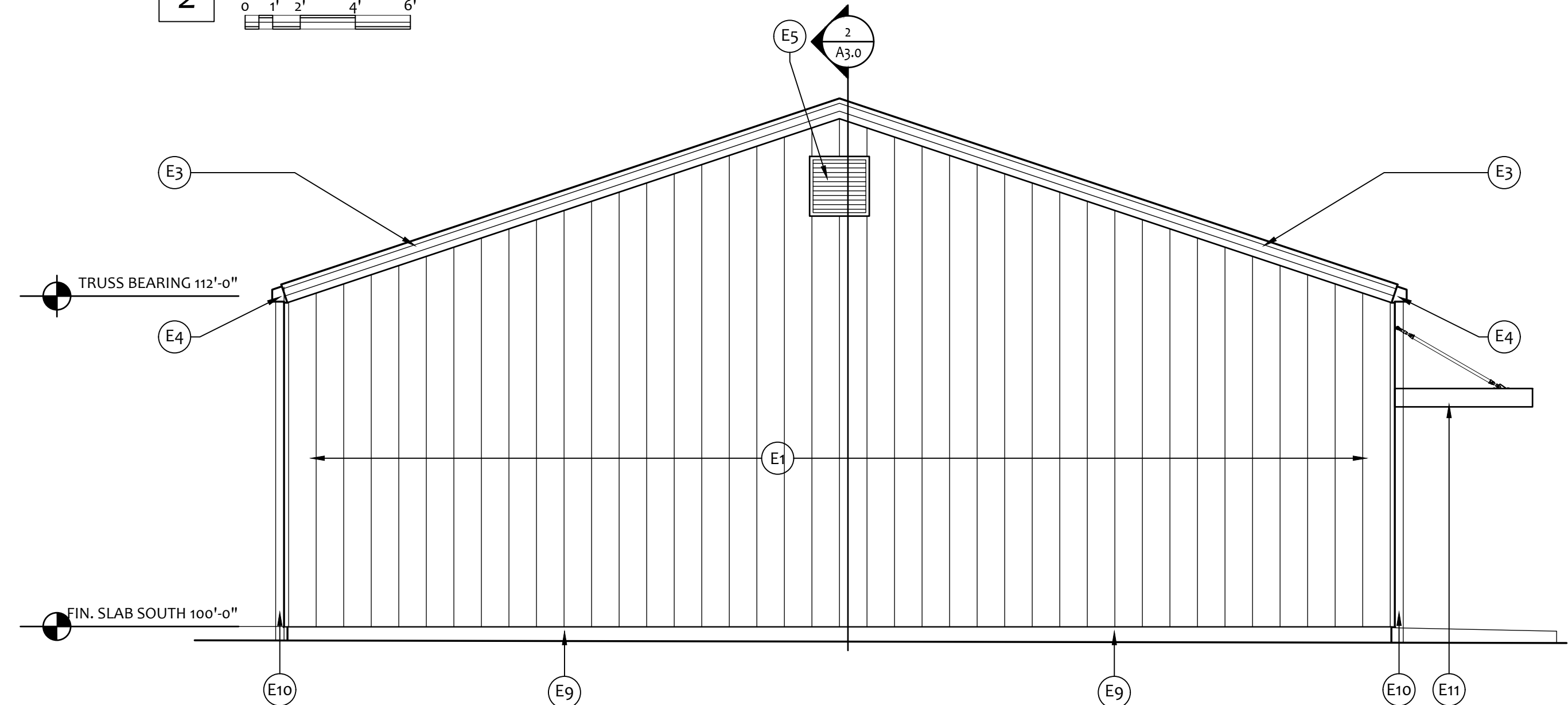




FRONT ELEVATION



BACK ELEVATION



SIDE ELEVATION

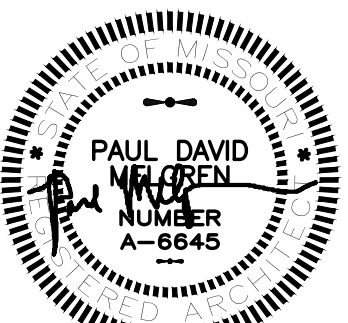


ELEVATION KEYED NOTES:

- E1 VERTICAL METAL BUILDING PANELS
- E2 PREFINISHED METAL PANEL WALL, JAMB AND HEAD TRIM BACK TO DOORS, FINISH TO MATCH PANELS
- E3 PREFINISHED METAL RAKE TRIM, COLOR SELECTED BY ARCHITECT
- E4 PREFINISHED METAL FASCIA AND GUTTER, COLOR SELECTED BY ARCHITECT
- E5 24 X 24 PREFINISHED LOUVER.
- E6 18'-0" X 8'-0" OVERHEAD GARAGE DOOR
- E7 PAINTED HOLLOW METAL DOOR AND FRAME. PROVIDE DRIP RAIL ON DOOR FRAME
- E8 PREFINISHED METAL ROOFING PANELS ON ROOF PURLINS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE TRUSS BRACING PER TRUSS MANUFACTURER'S RECOMMENDATIONS.
- E9 CONCRETE FOUNDATION WALL
- E10 PREFINISHED METAL DOWNSPOUT
- E11 PREMANUFACTURED CANOPY WITH HANGING RODS. 6'-0" WIDE BY 5'-0" DEEP. CENTER OVER DOOR,



New Training Building  
Nixa Police Department Shooting Range  
Nixa, Christian County, MO 65741  
City of Nixa, Missouri  
Nixa, Christian County, MO 65741



Paul David Melgren  
A-6645

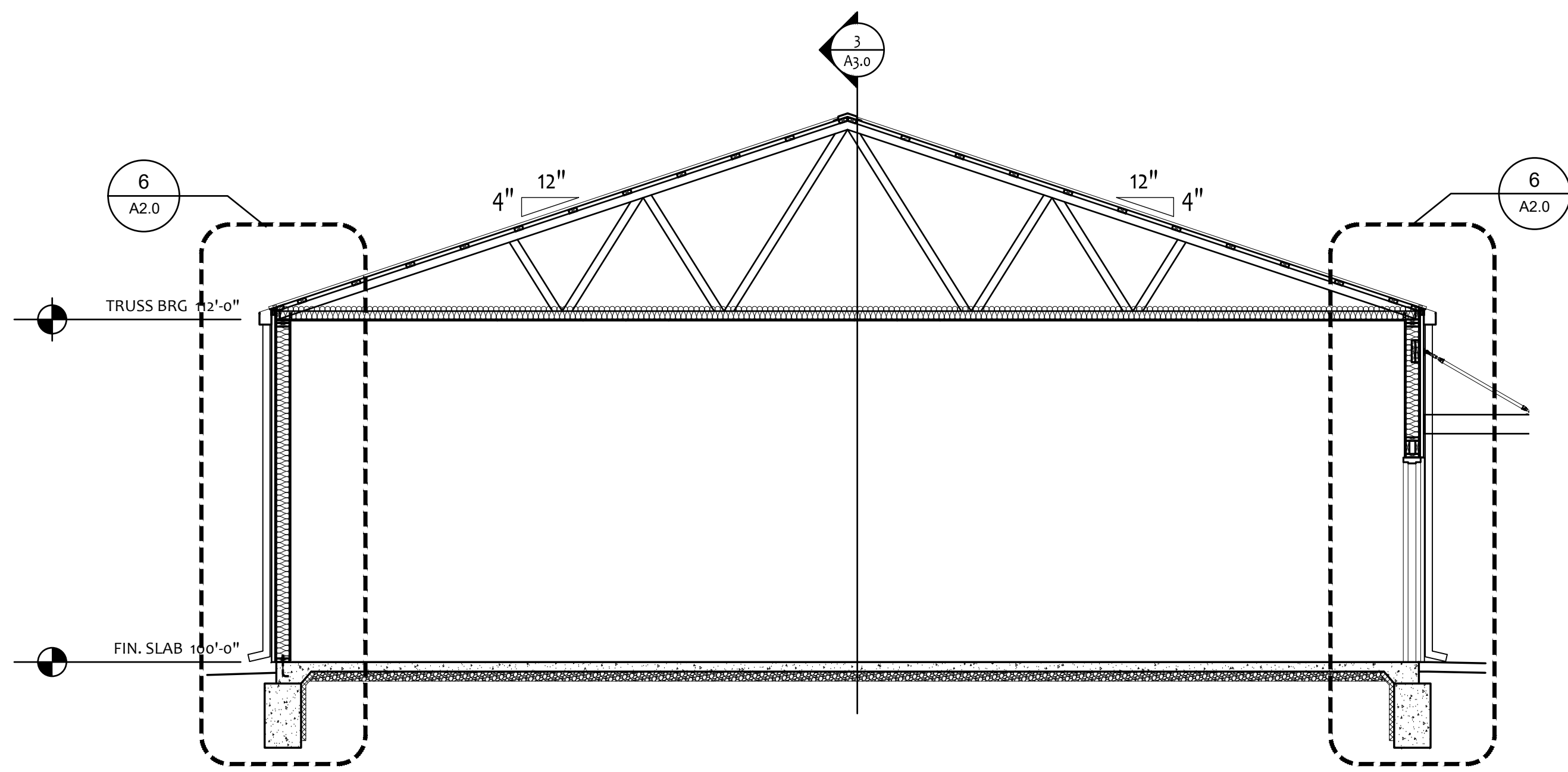
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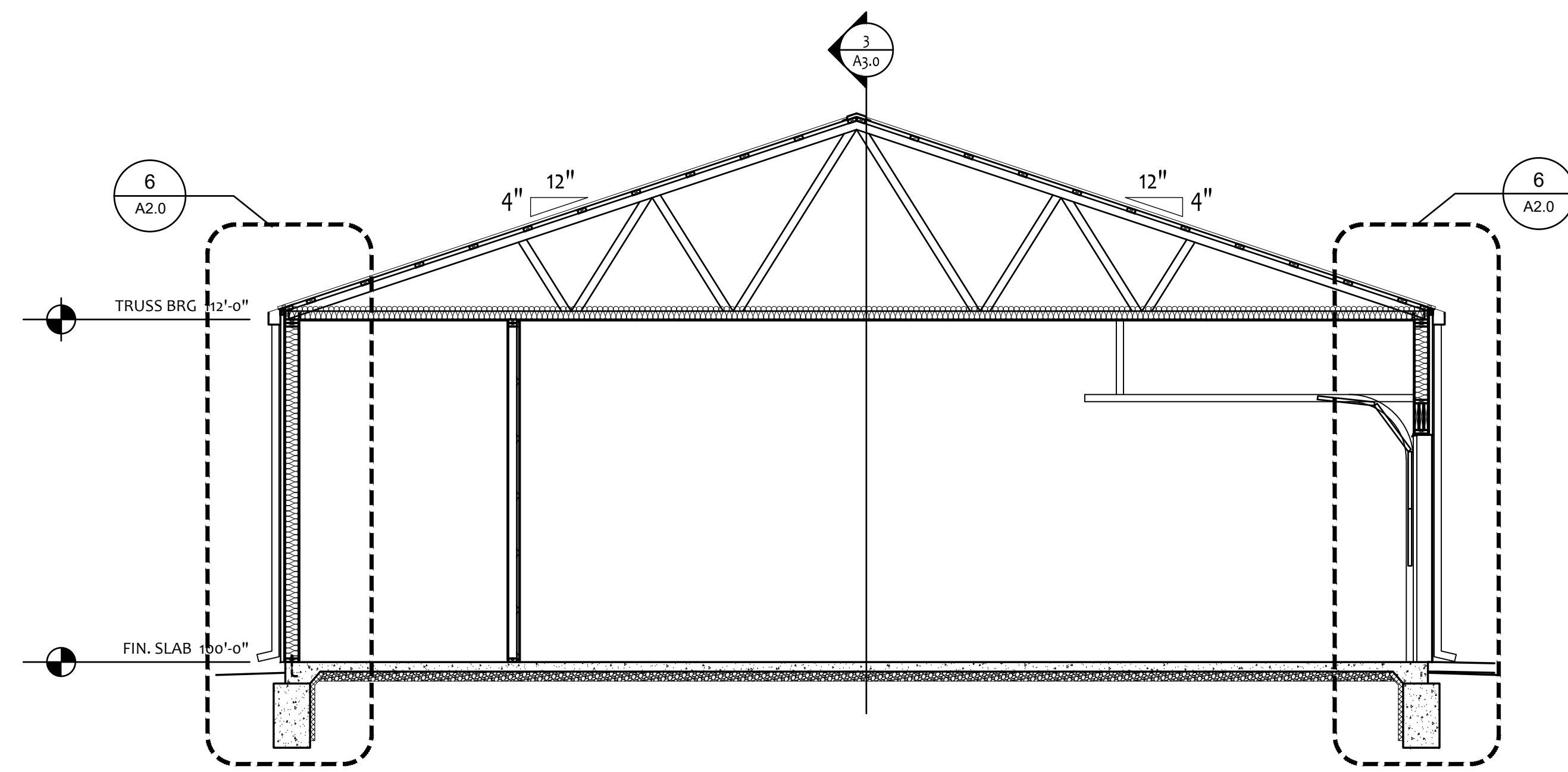
Elevations

A2.0

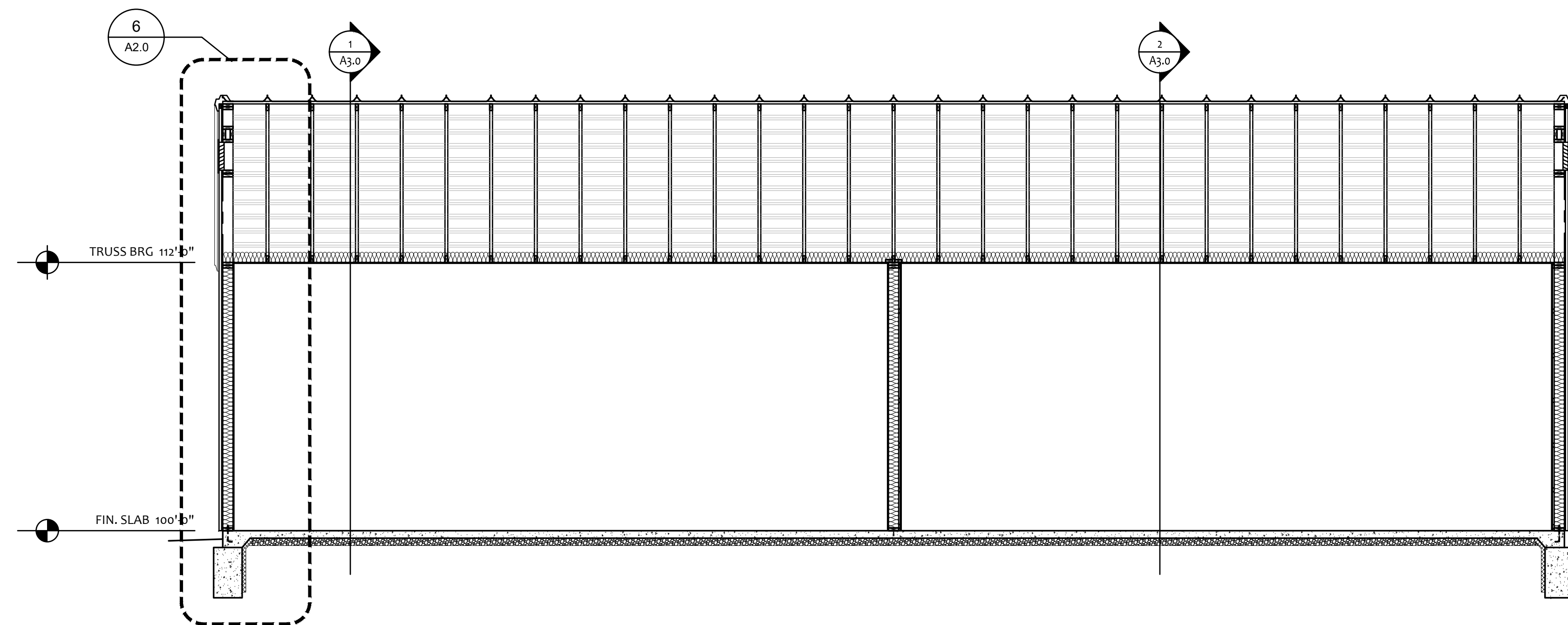




1 BUILDING SECTION

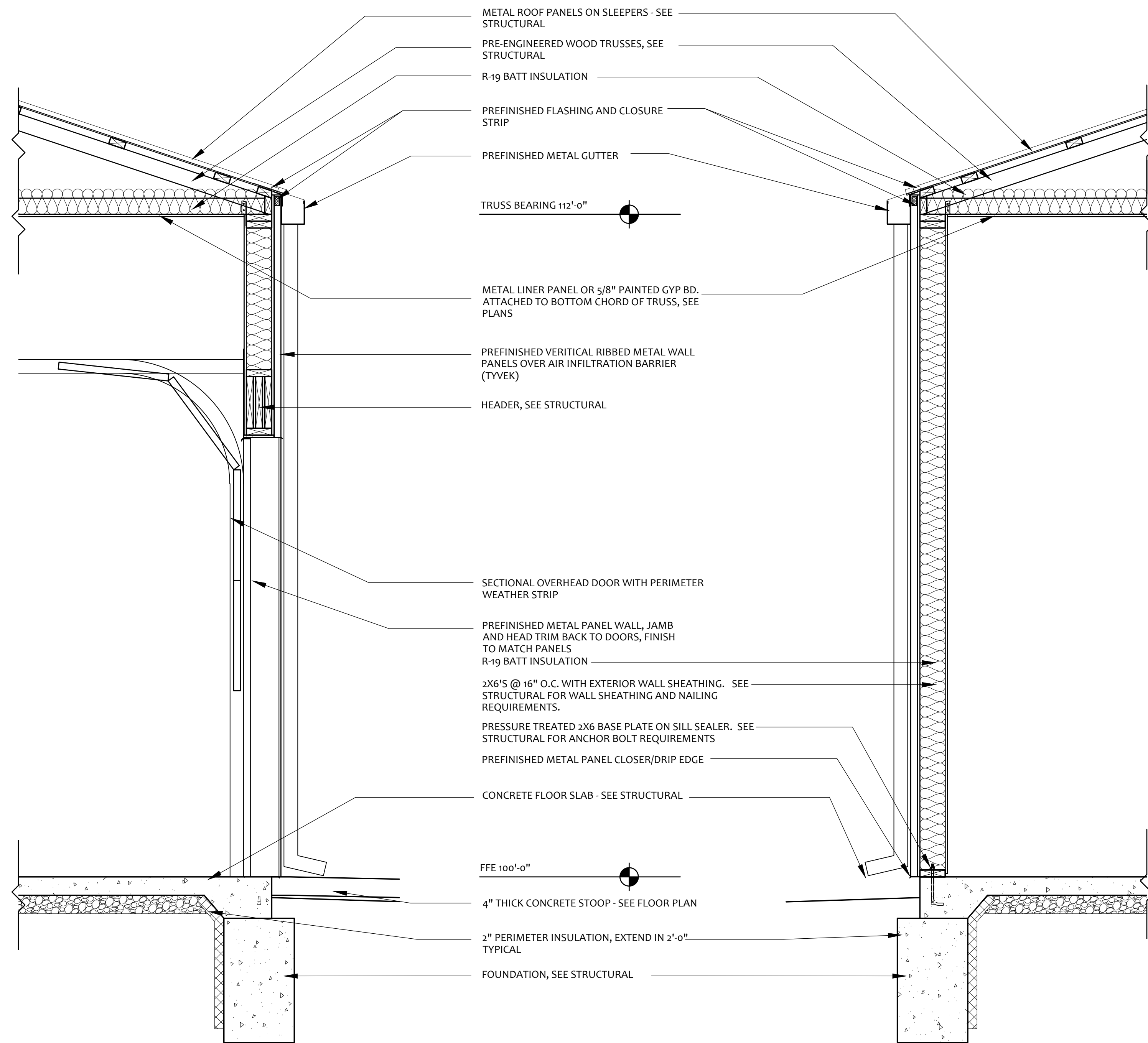


2 BUILDING SECTION

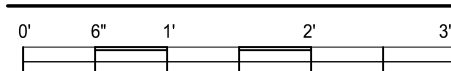


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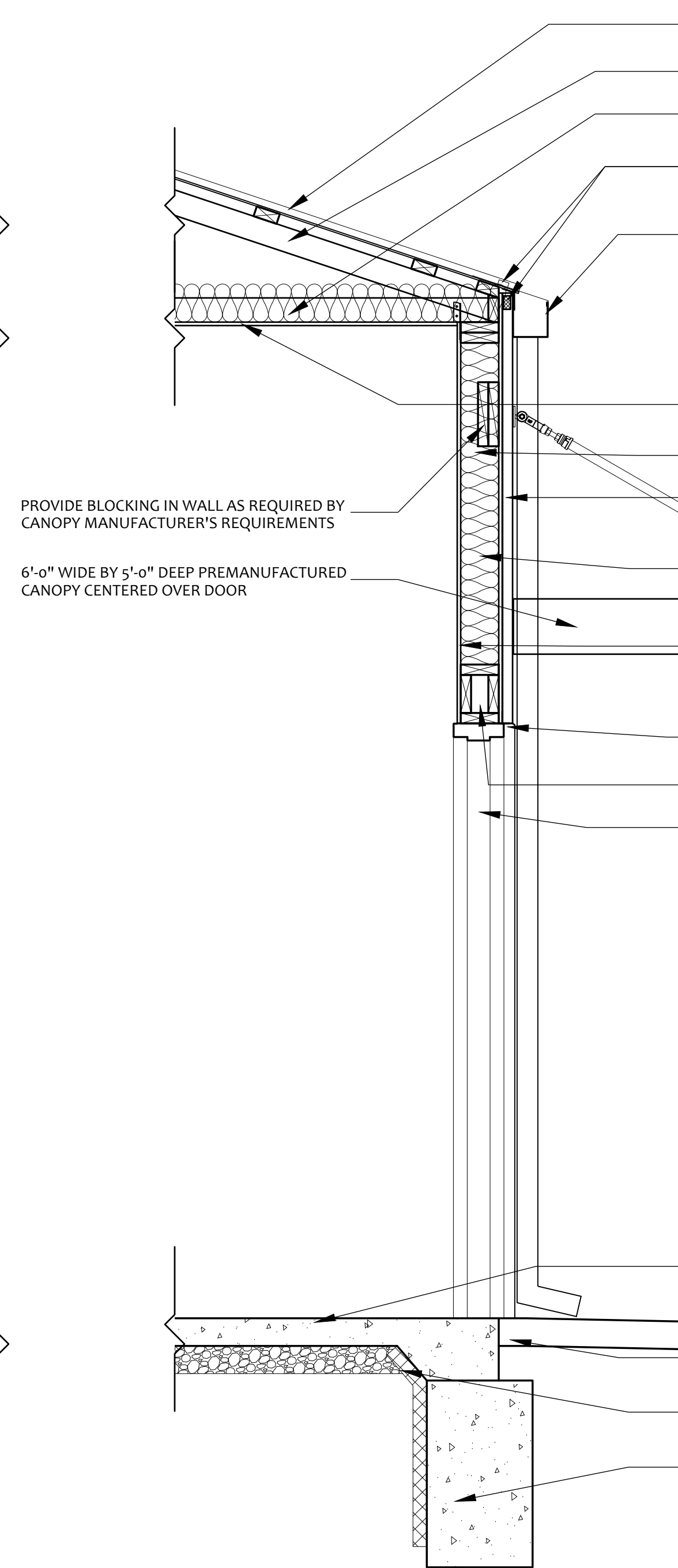
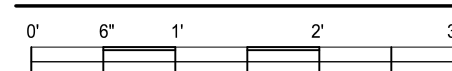




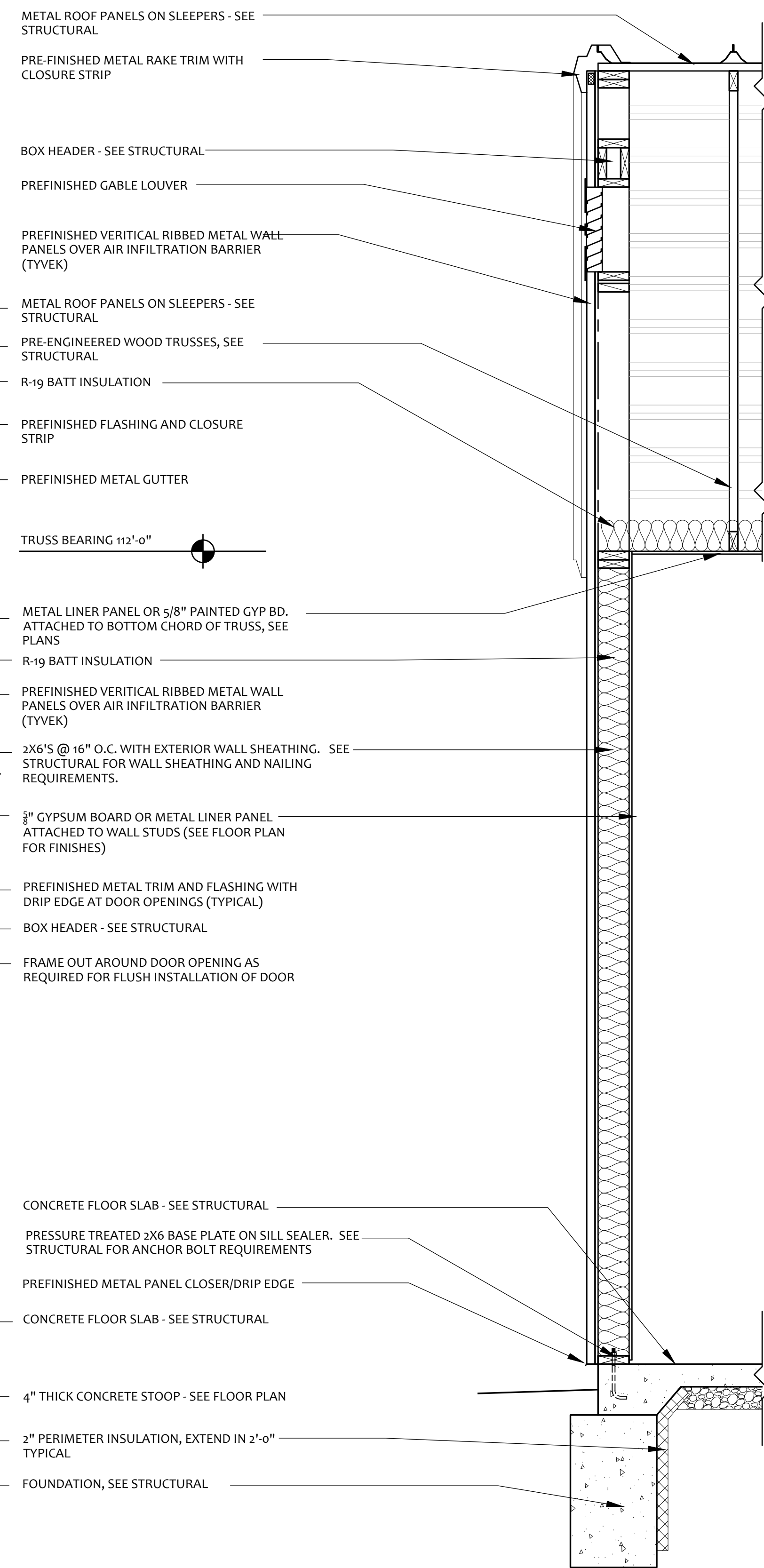
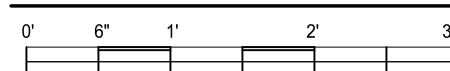
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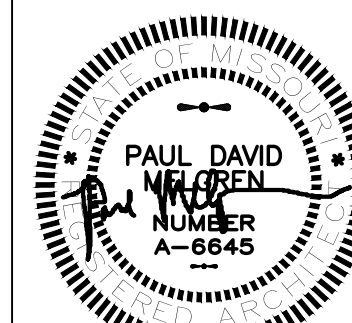
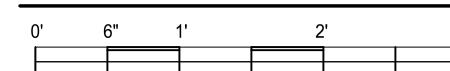
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3 DETAIL



4 DETAIL



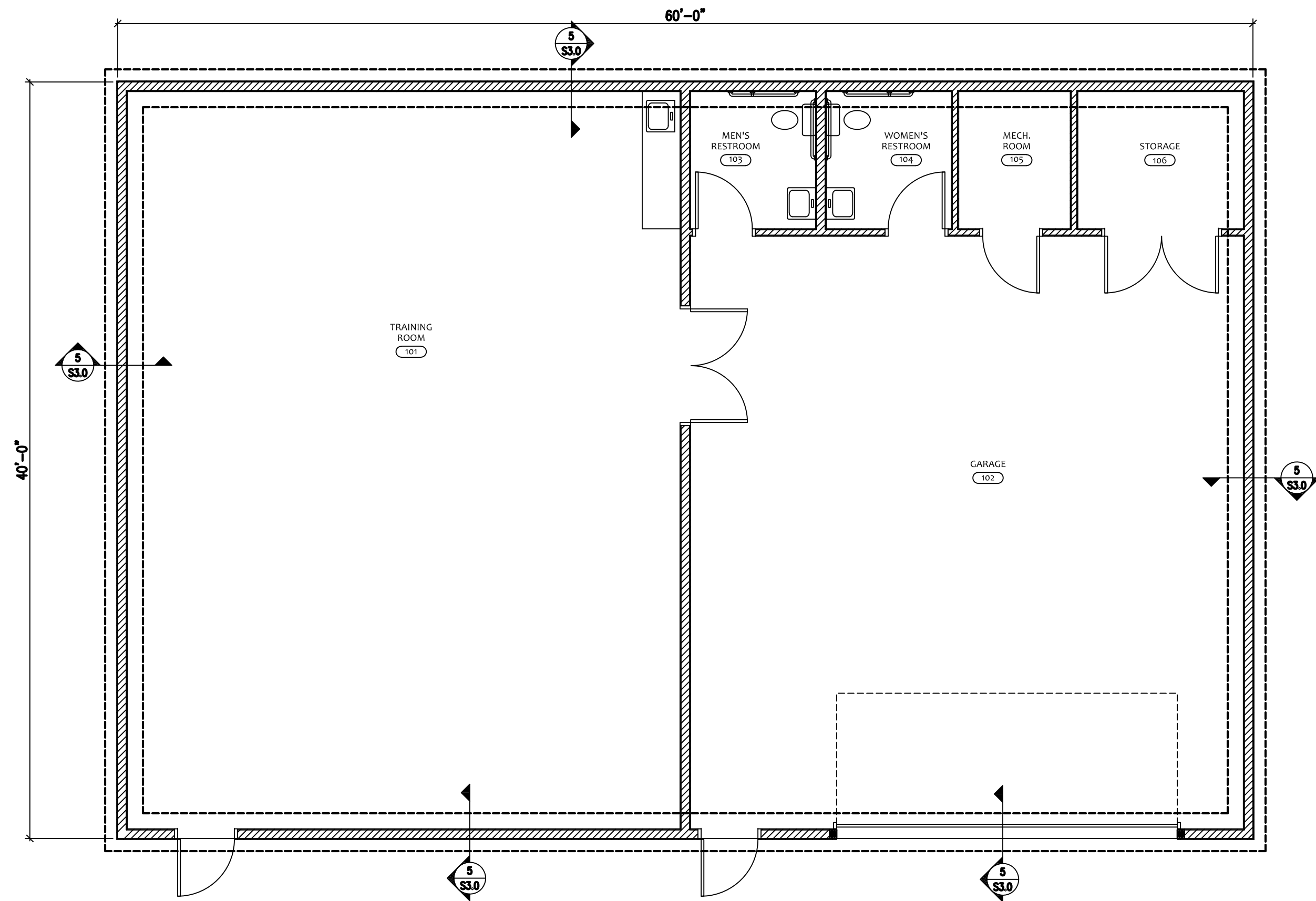
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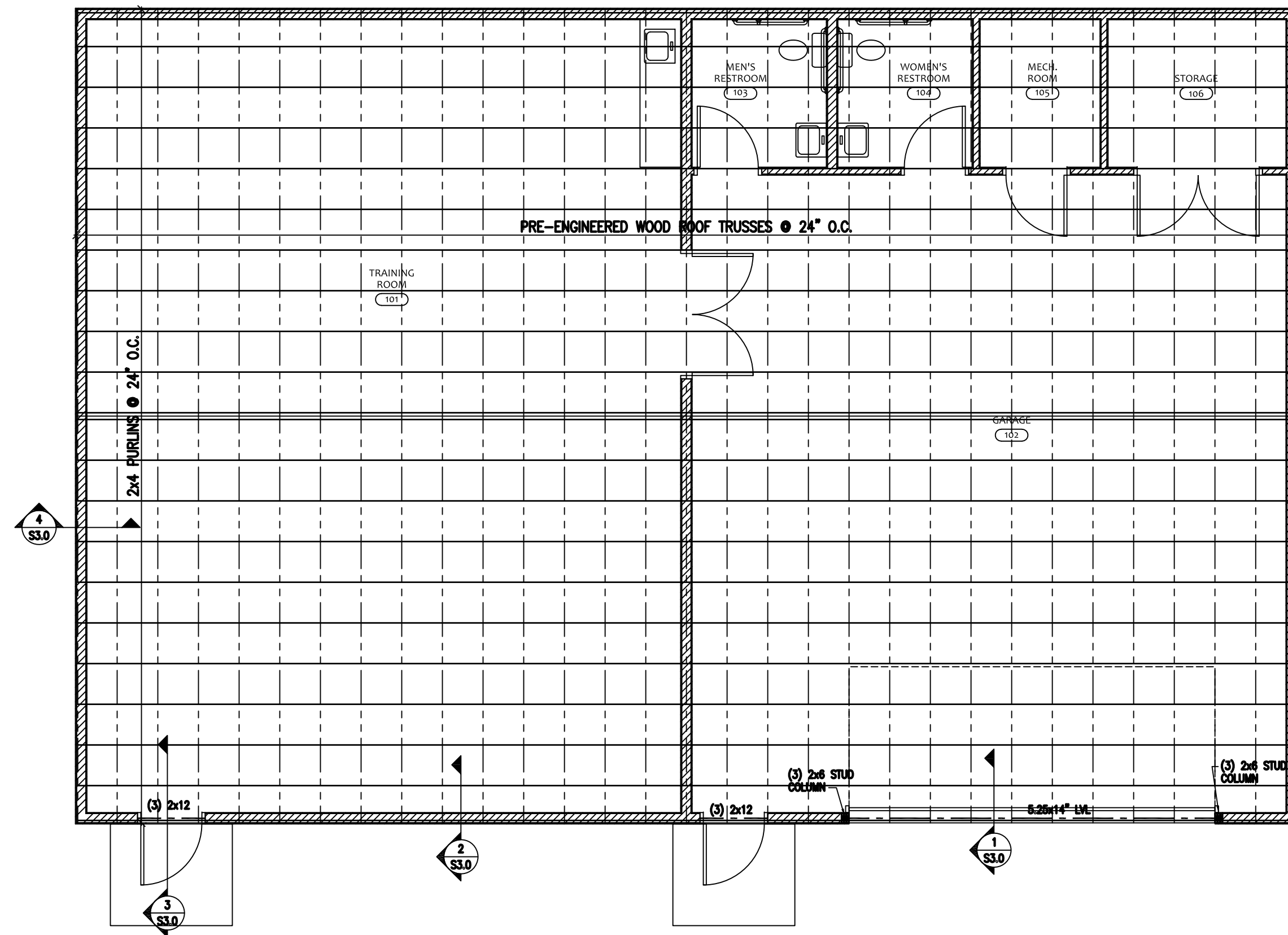
Project Number: 22-585.00  
 Date: OCTOBER 26, 2022

Wall Sections





1 FOUNDATION PLAN  
SCALE: 3/16"=1'-0"



2 FRAMING PLAN  
SCALE: 3/16"=1'-0"

APPROVALS	
INITIAL	DATE



New Training Building  
Nixa Police Department Shooting Range  
--- Nixa, Christian County, MO 65741

City of Nixa, Missouri  
Nixa, Christian County, MO 65741



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Project Number: 22-585.00  
Date: September 27, 2022

Foundation &  
Framing Plan

S1.0





GENERAL NOTES:

A. CODES AND STANDARDS

1. THE INTERNATIONAL BUILDING CODE/2018 EDITION
2. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY (ACI 318-08)
3. ASTM STANDARDS IN BUILDING CODES, VOLUMES I, II, AND III.
4. AMERICAN SOCIETY FOR TESTING AND MATERIALS
5. MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES (ASCE 7-05)
6. PCI DESIGN HANDBOOK 6th EDITION

B. DESIGN LOADS

1. LIVE LOADS:
  - a. FLOORS.....40 PSF
  - b. ROOF (MIN.).....30 PSF
2. SUPERIMPOSED DEAD LOADS
  - a. HUNG LOADS (CEILING, LIGHTS, PIPES, ETC).....20 PSF
3. ROOF LOADS
  - a. GROUND SNOW LOAD.....20 PSF
  - b. EXPOSURE FACTOR.....0.7
  - c. IMPORTANCE FACTOR (I).....1.0
  - d. ROOF LIVE LOAD (MIN).....30 PSF
  - e. NET UPLIFT (MIN).....10 PSF
4. WIND
  - a. BASIC WIND SPEED (V).....115 MPH
  - b. IMPORTANCE FACTOR (I).....1.00
  - c. EXPOSURE.....C
  - d. INTERNAL PRESSURE COEFFICIENT.....GCPI = +0.55

D. EXCAVATION AND BACKFILLING

1. PROVIDE ADEQUATE SHORING AND BRACING FOR ALL EXCAVATIONS AS REQUIRED TO MAINTAIN SAFETY AND PROTECTION FOR ADJACENT STRUCTURES AND FINISHES.
2. FILL IN STRUCTURAL AREAS OR PAVEMENT AREAS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM MODIFIED DRY DENSITY

E. FOUNDATIONS

1. ALL FOOTINGS SHALL BEAR ON NATURAL SOILS OR PROPERLY COMPACTED FILL HAVING A BEARING CAPACITY OF 2.5 K.S.F. AS APPROVED BY THE GEOTECHNICAL ENGINEER
2. DEWATERING: PROVIDE PUMPING EQUIPMENT TO KEEP THE EXCAVATION FREE OF WATER BEFORE PLACING CONCRETE.
3. FOOTINGS SHALL NOT BE PLACED IN WATER OR ON FROZEN SOIL
4. FROST PROTECTION: 30" MINIMUM MEASURED FROM BOTTOM OF FOOTING
5. THE ARCHITECT AND ENGINEER ASSUME NO RESPONSIBILITY FOR THE VALIDITY IF SUBSURFACE CONDITIONS DESCRIBED ON THE DRAWINGS OR IN THE SPECIFICATIONS. THESE DATA ARE INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION, AND REPRESENT CONDITIONS ONLY AT THESE SPECIFIC LOCATIONS AT THE PARTICULAR TIME THEY WERE MADE.

F. CAST-IN-PLACE CONCRETE

1. CONCRETE WORK SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE/2012, THE ACI BUILDING CODE (ACI 318-02) AND TO THE SPECIFICATIONS. IN CASE OF CONFLICT, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
2. ALL STRUCTURAL REINFORCED CONCRETE MEMBERS ARE DESIGNED USING "STRENGTH" DESIGN PROVISIONS
3. CONCRETE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE USED IN THE FOLLOWING AREAS:
  - A) 3000 PSI NORMAL WEIGHT CONCRETE: IN ALL AREAS
4. ALL CONSTRUCTION, CONTROL AND EXPANSION JOINTS SHOWN ON THE DRAWINGS SHALL BE INCORPORATED INTO THE FINAL STRUCTURE UNLESS THEIR ELIMINATION IS APPROVED BY THE ARCHITECT
5. IF NOT SHOWN ON DRAWING, PROVIDE CONTROL JOINTS IN SLABS AT COLUMN LINES, AND MAXIMUM SPACING NOT TO EXCEED 12'-0" BETWEEN JOINTS
6. ALL KEYS SHALL BE A NOMINAL 2 INCHES BY 4 INCHES UNLESS OTHERWISE NOTED ON THE DRAWINGS.
7. CONTRACTOR SHALL SUBMIT TO ARCHITECT, FOR APPROVAL, A SCHEDULE OF FLOOR POURS AT LEAST TWO WEEKS PRIOR TO INITIAL POUR
8. ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR ENTRAINED WITH 5% MIN. AIR
9. ADD 3/4" CHAMFER TO EDGES OF ALL CONCRETE EXPOSED TO VIEW

G. REINFORCING

1. ALL REINFORCING BAR DETAILS NOT OTHERWISE SHOWN OR SPECIFIED SHALL CONFORM TO THE LATEST ACI CODE AND DETAILING MANUAL
2. NEW BILLET STEEL, ASTM A615, GRADE 60 SHALL BE USED FOR REINFORCING FOR ALL CONCRETE
3. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185
4. ALL ACCESSORIES NECESSARY TO MAINTAIN EXACT BAR POSITIONS SHALL BE SHOWN ON REINFORCING SHOP DRAWINGS
5. UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS, THE CONCRETE COVER FOR THE REINFORCING SHALL BE AS FOLLOWS
  - a) UNIFORM SURFACES IN CONTACT WITH THE GROUND.....3"
  - b) FORMED SURFACES IN CONTACT WITH THE GROUND.....2"
  - c) SLABS ON GRADE.....2" UNDER
  - d) INTERIOR SURFACES OTHER THAN SLABS.....1"
  - e) IN ALL CASES CLEARANCE NOT LESS THAN THE DIAMETER THAN THE BAR
  - f) MAXIMUM DEVIATION FROM THESE REQUIREMENTS SHALL BE +1/4" FOR SECTIONS TEN INCHES OR LESS AND + 1/2" FOR SECTIONS OVER 10"
  - g) LAP SPLICES SEE SCHEDULE ON THIS SHEET
  - h) WHERE REINFORCEMENT IS NOT SHOWN ON THE DRAWINGS, PROVIDE THE MINIMUM REINFORCEMENT PERMITTED BY A.C.I. CODES
  - i) WHEN CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE DRAWINGS, ARE REQUIRED BY THE CONTRACTOR, THE REINFORCEMENT SHALL RUN CONTINUOUSLY THROUGH THE JOINT AND ADEQUATE SHEAR TRANSFER REINFORCEMENT SHALL BE ADDED
  - j) FOR SLAB ON METAL DECK, PROVIDE #4 BARS 5'-0" LONG AT 12" ON CENTERS OVER STEEL GIRDERS. (GIRDERS ARE DEFINED AS BEAMS PARALLEL TO DECK SPAN)
  - k) PROVIDE THE EXTRA REINFORCING SHOWN IN TYPICAL DETAILS WHEREVER THE DETAIL CAN APPLY

J. ANCHOR BOLTS

1. ANCHORS BOLTS TO BE ASTM A572, GRADE 50 STEEL, HOT-DIP GALVANIZED. ANCHOR BOLTS SHALL BE INSTALLED VERTICAL AND SECURED TOP AND BOTTOM TO ENSURE THAT PLACEMENT OF CONCRETE WILL NOT DISPLACE ALIGNMENT. NO BENDING OR MODIFICATION OF ANCHOR BOLTS MAYBE MADE WITHOUT THE PERMISSION OF THE FOUNDATION ENGINEER OF RECORD.

I. STRUCTURAL WOOD FRAMING

1. EXCEPT WHERE NOTED OTHERWISE ALL 2" LUMBER SHALL BE #2 OR BETTER S.P.F., AND ALL SOLID TIMBER BEAMS AND POSTS SHALL BE #2 S.P.F.
2. TOP AND BOTTOM PLATES SHALL BE #2 OR BETTER D.F. PLATES IN CONTACT WITH CONCRETE SHALL BE ACQ. TREATED. HANGERS AND ANCHORS IN CONTACT WITH ACQ. TREATED WOOD SHALL BE G185 CORROSION RESISTANT OR TYPE 304 OR 316 STAINLESS STEEL.
3. EXCEPT AS NOTED OTHERWISE, MINIMUM NAILING SHALL BE PROVIDED AS SPECIFIED IN TABLE NO. 2304.9.1 FASTENING SCHEDULE OF THE CURRENT INTERNATL. BUILDING CODE.
4. 2x4 STUDS SHALL BE NAILED TO TOP PLATE WITH 3-16d END NAILS AND TO SOLE PLATE WITH 6-8d TOENAILS
5. ALL PLYWOOD OR O.S.B. BD. SHEATHING SHALL BE APA RATED. EXPOSURE 1. PANEL IDENTIFICATION INDEX AND/OR THICKNESS SHALL BE 32/16, 1/2" MINIMUM, OR AS NOTED ON DRAWINGS.
6. TRUSSED RAFTERS AND MFG. JOISTS, AS WELL AS ALL CONNECTIONS SHALL BE DESIGNED BY A REGISTERED ENGINEER TO SUPPORT THE FULL DEAD AND LIVE LOADS OF THE ROOF, FLOOR, CEILING AND ANY OTHER SUPERIMPOSED LOADS. WEB ARRANGMENT AND MEMBER FORCES SHALL BE DETERMINED BY THE TRUSSED RAFTER/JOIST FABRICATOR. STRESSES SHALL NOT EXCEED THOSE ALLOWED BY THE CURRENT BOCA NATL. BLDG. CODE. LOAD DURATION FACTOR MAY BE 1.15 FOR ROOF TRUSSES ONLY. CALCULATIONS AND SHOP DRAWINGS, INCLUDING MEMBER SIZES, LUMBER SPECIES AND GRADES AND SUBSTANTIATING DATA FOR CONNECTOR CAPACITIES, SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
7. LEAD HOLES FOR LAG BOLTS SHALL BE DRILLED IN ACCORDANCE WITH TABLE 5.1. OF THE A.I.T.C. TIMBER CONSTRUCTION MANUAL.
8. STUD NOTCHING MUST NOT EXCEED 20% OF STUD DEPTH.
9. HOLES DRILLED IN EXTERIOR WALL STUDS SHALL NOT EXCEED 1" DIA.
10. TEMPORARY CONSTRUCTION LOADS WHICH EXCEED THE DESIGN CAPACITY OF ANY ELEMENT ARE PROHIBITED. ERECTION BRACING SHALL BE PROVIDED TO ASSURE ADEQUATE LATERAL SUPPORT FOR THE INDIVIDUAL ELEMENTS, AS WELL AS THE ENTIRE SYSTEM UNTIL SHEATHING IS INSTALLED. (SHEATHING CAN BE EITHER PLYWOOD, OSB, OR GYP-BOARD)

M. HEADER SCHEDULE

FLOOR SPAN	3'-0	4'-0	5'-0	6'-0	7'-0	8'-0
	(2) 2x6	(2) 2x8	(2) 2x10	(2) 2x12	(2) 2x12	(3) 2x12
ROOF SPAN	3'-0	4'-0	5'-0	6'-0	7'-0	8'-0
	(2) 2x6	(2) 2x8	(2) 2x8	(2) 2x10	(2) 2x12	(2) 2x12

N. ROOF TRUSS LOADING

DL AT TOP CHORD	9.0 PSF
DL AT BOTTOM CHORD	11.0
TOTAL DEAD LOAD	20.0 PSF
LIVE LOAD (MINIMUM)	30.0
TOTAL DESIGN LOAD	50.0 PSF
NET UPLIFT (DUE TO WIND)	10.0 PSF (30.0 AT O.H.)

O. HVAC UNITS COORDINATION

1. OPENINGS AND LOCATION SHOWN FOR HVAC UNITS ETC. ON THE FRAMING PLANS ARE SUBJECT TO CHANGE. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO PREPARING SHOPDRAWINGS FOR DECK, JOISTS AND STRUCTURAL STEEL

P. SHEARWALL NOTES AND ROOF DIAPHRAGMS:

1. PROVIDE SHEARWALLS AT ALL EXTERIOR WALLS
2. 1/2" EXTERIOR SHEATHING w/ BLOCKED DIAPHRAGMS FASTENED 4" O.C. w/ 8d NAILS WITH 1 3/8" PENETRATIONS. PROVIDE SOLID BLOCKING AT ALL HORZ. JOINTS.

SHEARWALL ANCHORING:

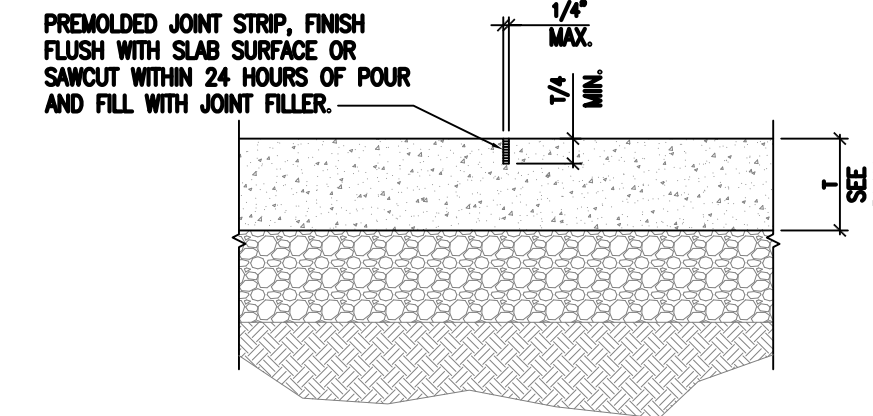
1. PROVIDE 2-2x4 (MIN.) AT ENDS OF SHEARWALL.
2. ALL REFERENCES TO PLYWOOD INDICATE ANY WOOD (EXTERIOR RATED) SHEATHING W/ APA EQUIVALENT SPAN RATING PER THE FOLLOWING:

APPROX. THICKNESS	SPAN RATING
7/16"	32/16

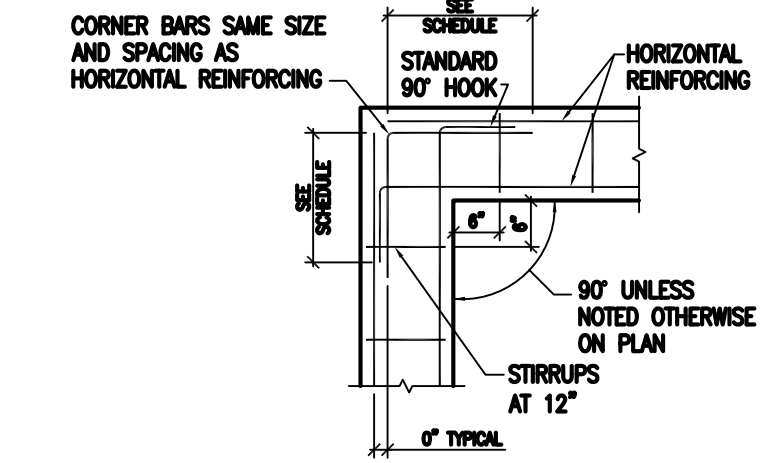
R. MISCELLANEOUS CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ALL DIMENSIONS IN THE FIELD, AND NOTIFY THE ARCHITECT IF CONDITIONS ENCOUNTERED ARE NOT AS SHOWN ON DRAWINGS
2. CONSULT ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR VERIFICATION OF THE LOCATION AND DIMENSIONS OF THE CHASES, INSERTS, OPENINGS, SLEEVES, WASHES, DRIPS, REVEALS, DEPRESSIONS AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
3. NO CHANGE IN SIZE OR DIMENSIONS OF MEMBERS SHALL BE MADE, NOR ANY OPENINGS OR SLEEVES SHALL BE PERMITTED THROUGH ANY STRUCTURAL MEMBER WITHOUT THE APPROVAL OF THE ARCHITECT
4. OPENINGS IN SLABS OR WALLS LESS THAN 12" IN DIA. ARE NOT GENERALLY SHOWN
5. FURNISH AND INSTALL ALL SUPPORTS, TEMPORARY OR PERMANENT, NECESSARY TO BRACE WALLS, EXISTING ADJACENT STRUCTURES AND GRADE, SO THAT NO HORIZONTAL OR VERTICAL SETTLEMENT OCCURS TO THESE WALLS, STRUCTURES OR GRADES. BRACING SHALL BE LEFT IN PLACE UNTIL PERMANENT SUPPORTS ARE INSTALLED
6. WHERE DETAIL IS NOT SHOWN ON THE DRAWINGS, FOR SUCH A SITUATION, THE DETAIL SHALL BE ASSUMED IN ACCORDANCE WITH APPLICABLE DETAILS OR SIMILAR TO THAT SHOWN FOR MOST NEARLY SIMILAR SITUATIONS, AS DETERMINED BY THE ARCHITECT. CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM WHEATHER OR NOT A PARTICULAR ELEMENT IS SPECIFICALLY CALLED OUT.
7. CONTRACTORS AND SUBCONTRACTORS SHALL THOROUGHLY REVIEW ALL CONDITIONS AND RESPONSIBILITIES STATED IN THESE NOTES, PLANS SECTIONS AND DETAILS, AND SHALL NOTIFY THE ENGINEER AND ARCHITECT IN WRITING PRIOR TO BIDDING OF ANY DISCREPANCIES, ERRORS OR OMISSIONS FOUND ON PLANS. IF CONTACTOR FAILS TO NOTIFY SAID REPRESENTATIVES, HE/SHE SHALL BE RESPONSIBLE FOR ALL COST OF LABOR AND MATERIALS NEEDED.

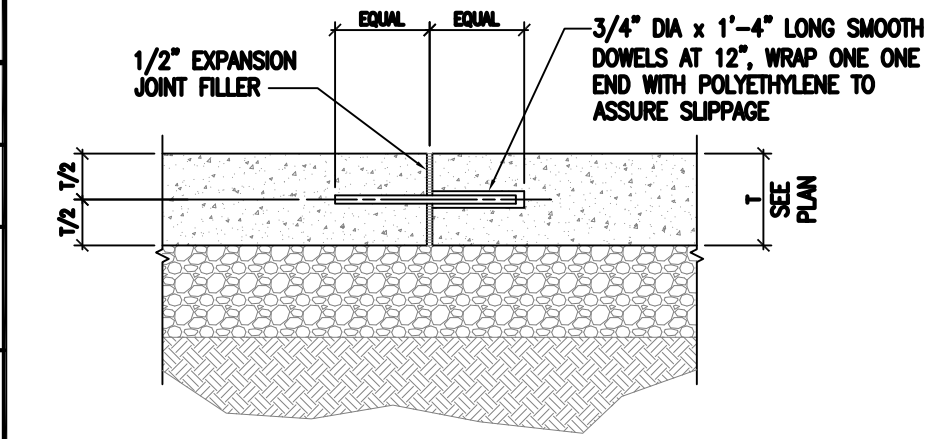
SCHEDULE OF SPLICE AND EMBEDMENT LENGTHS											
f'c = 3,000 PSI fy = 60,000 PSI	BAR SIZE										
	#3	#4	#5	#6	#7	#8	#9	#10	#11		
COMPRESSION SPLICE (L)											
ALL BARS	12	18	19	23	26	30	34	38	42		
TENSION SPLICE (L)											
BEAM TOP BARS AND WALL HORIZONTAL BARS	28	38	47	56	81	93	105	118	131		
STRAIGHT BARS	22	29	36	43	63	72	81	91	101		
EMBEDMENT (E)											
STRAIGHT TOP BARS	22	29	36	43		72	81	91	101		
STRAIGHT BARS	17	22	28	33	48	55	62	70	78		
HOKED BARS	6	8	10	12	14	16	18	20	22		
L = SPLICE LENGTH (INCHES) E = EMBEDMENT LENGTH (INCHES)											



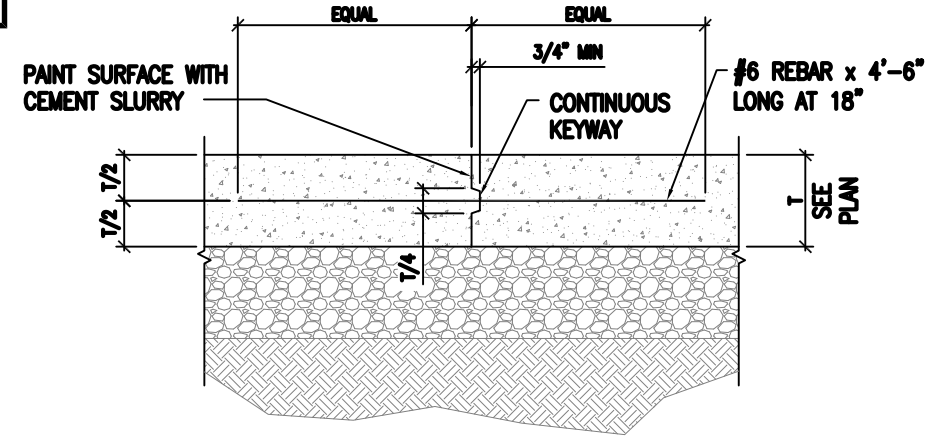
CONCRETE SLAB CONTROL JOINT



GRADE BEAM CORNER REINFORCING



CONCRETE SLAB EXPANSION JOINT



CONCRETE SLAB CONSTRUCTION JOINT

APPROVALS	DATE				
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New Training Building  
Nixa Police Department Shooting Range  
--- Nixa, Christian County, MO 65741

City of Nixa, Missouri  
Nixa, Christian County, MO 65741



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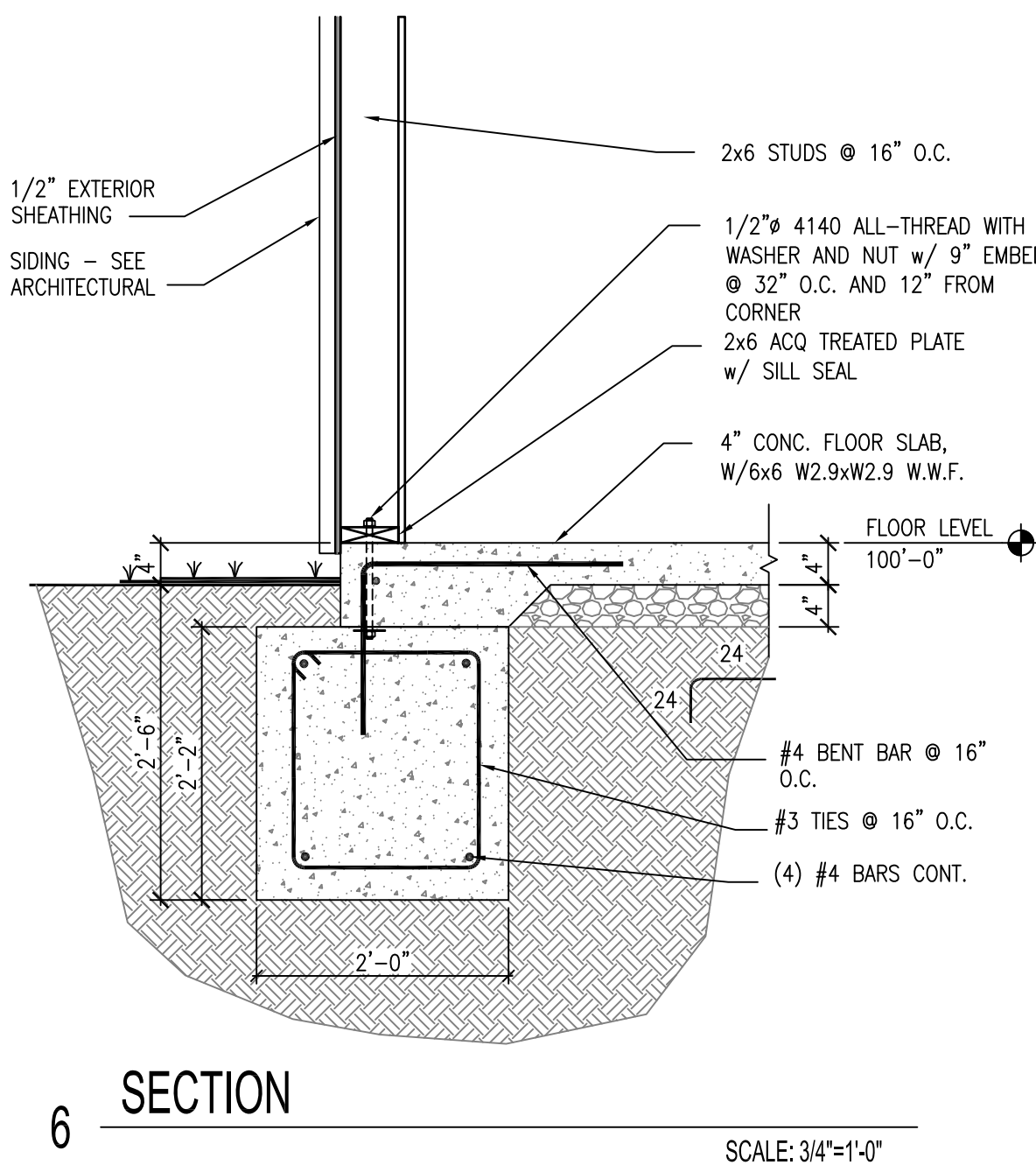
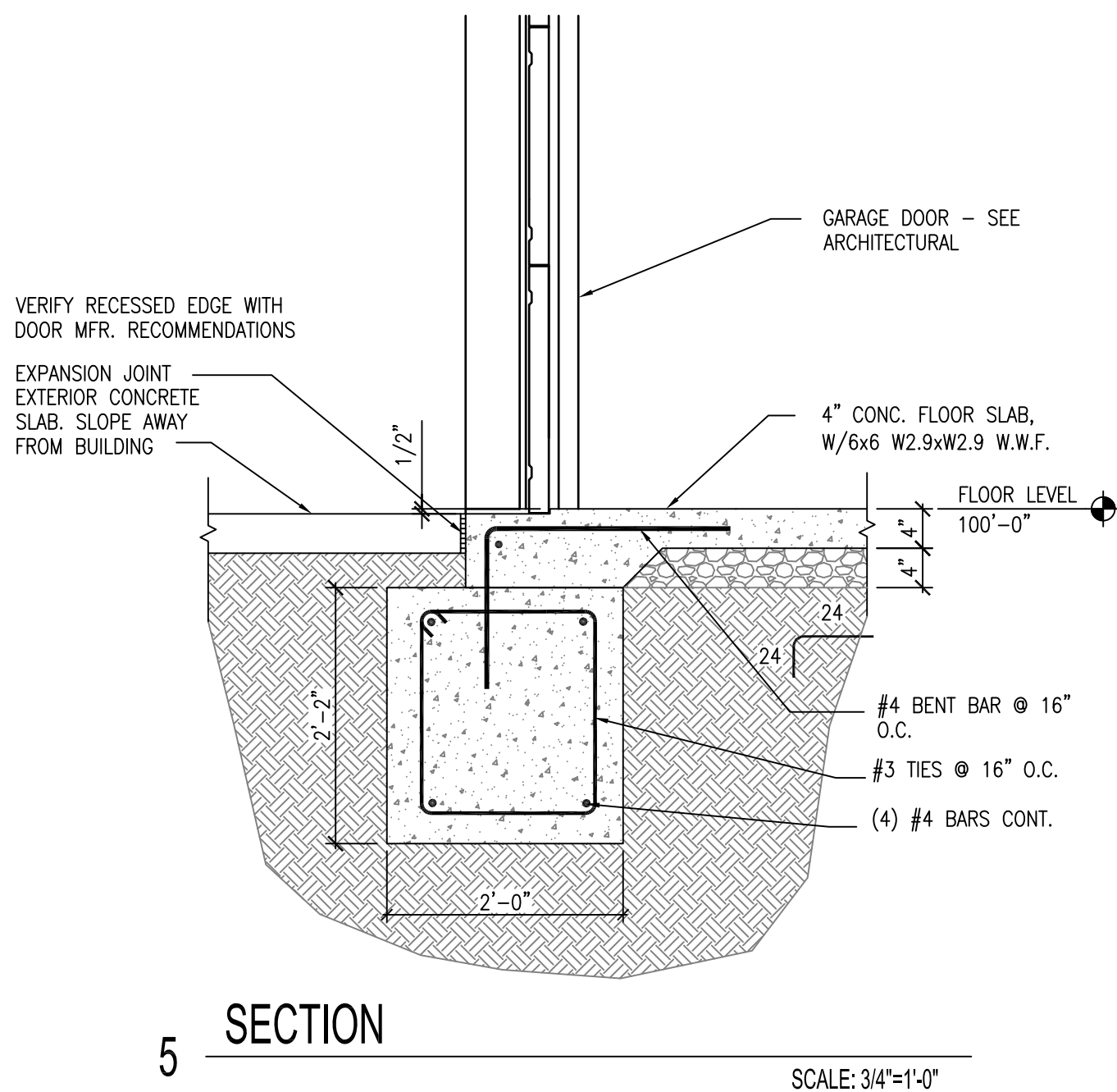
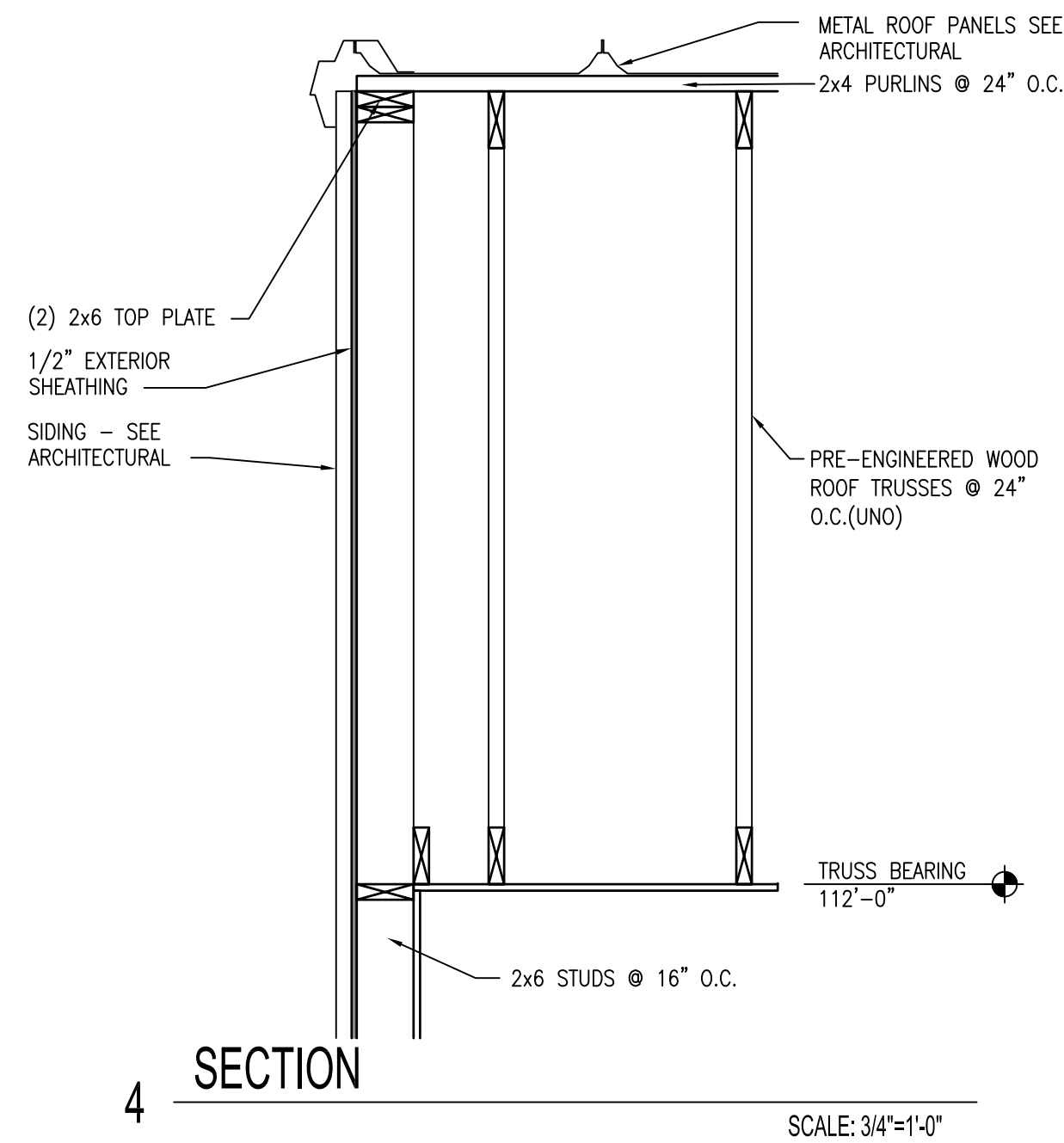
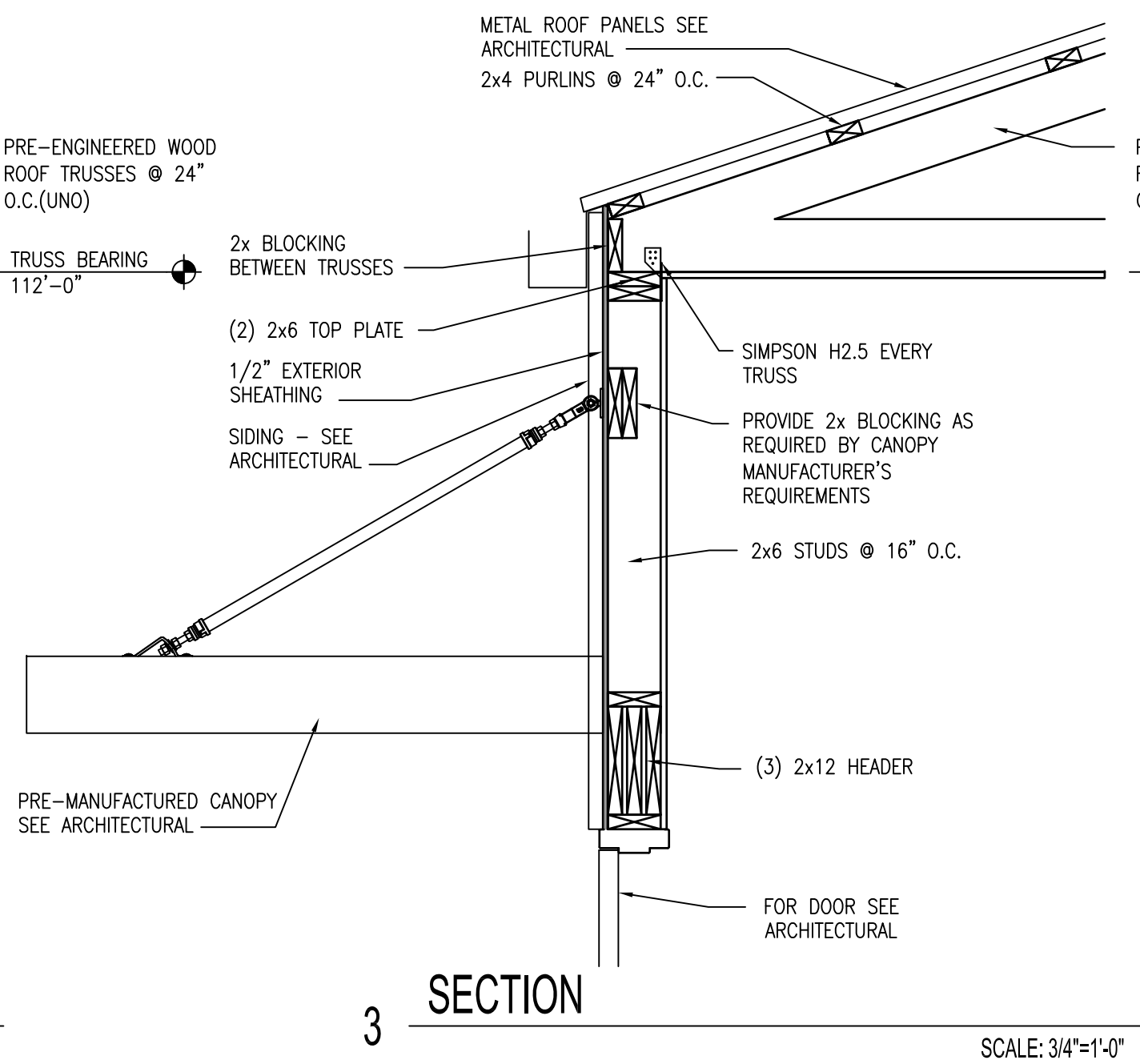
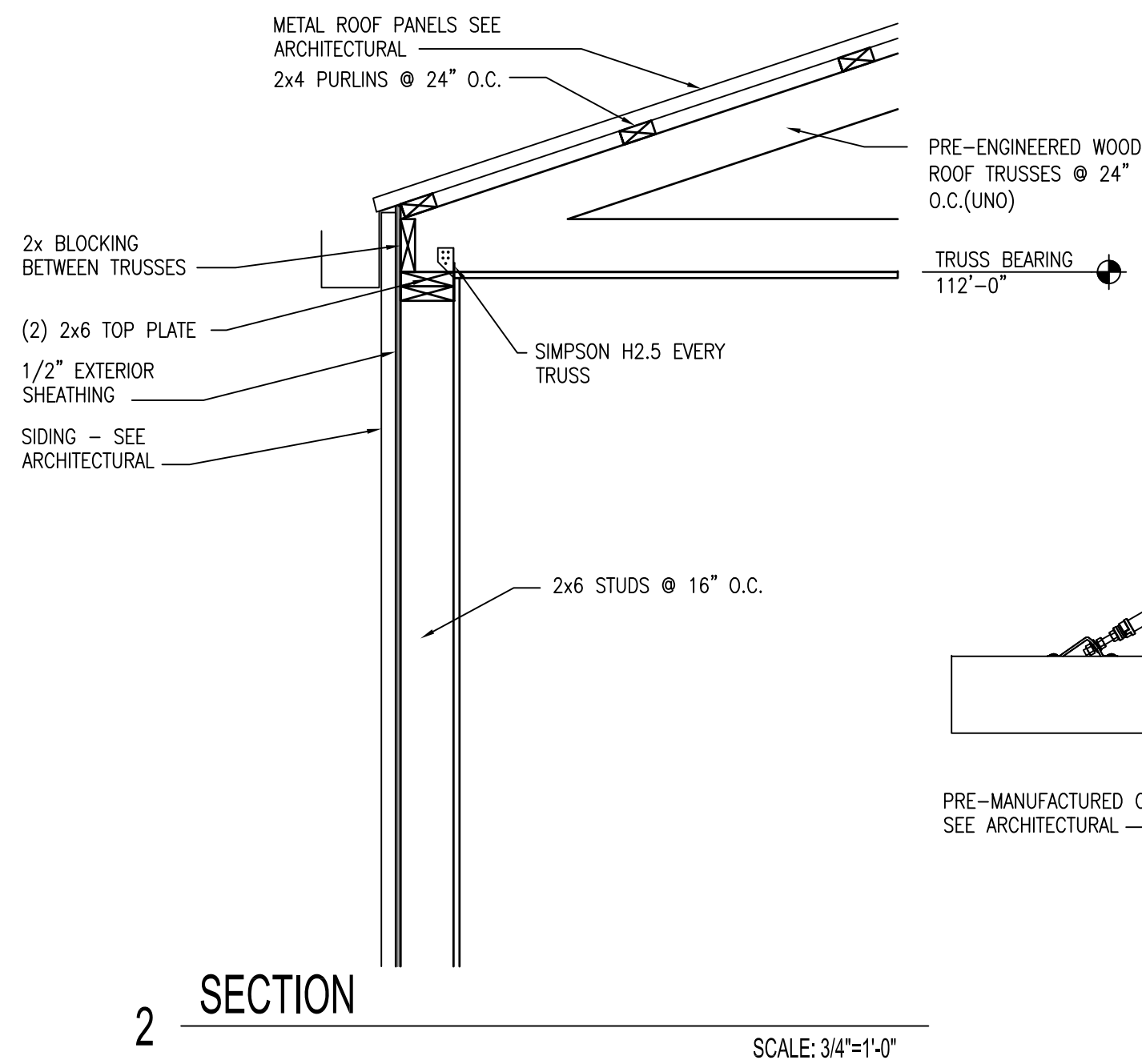
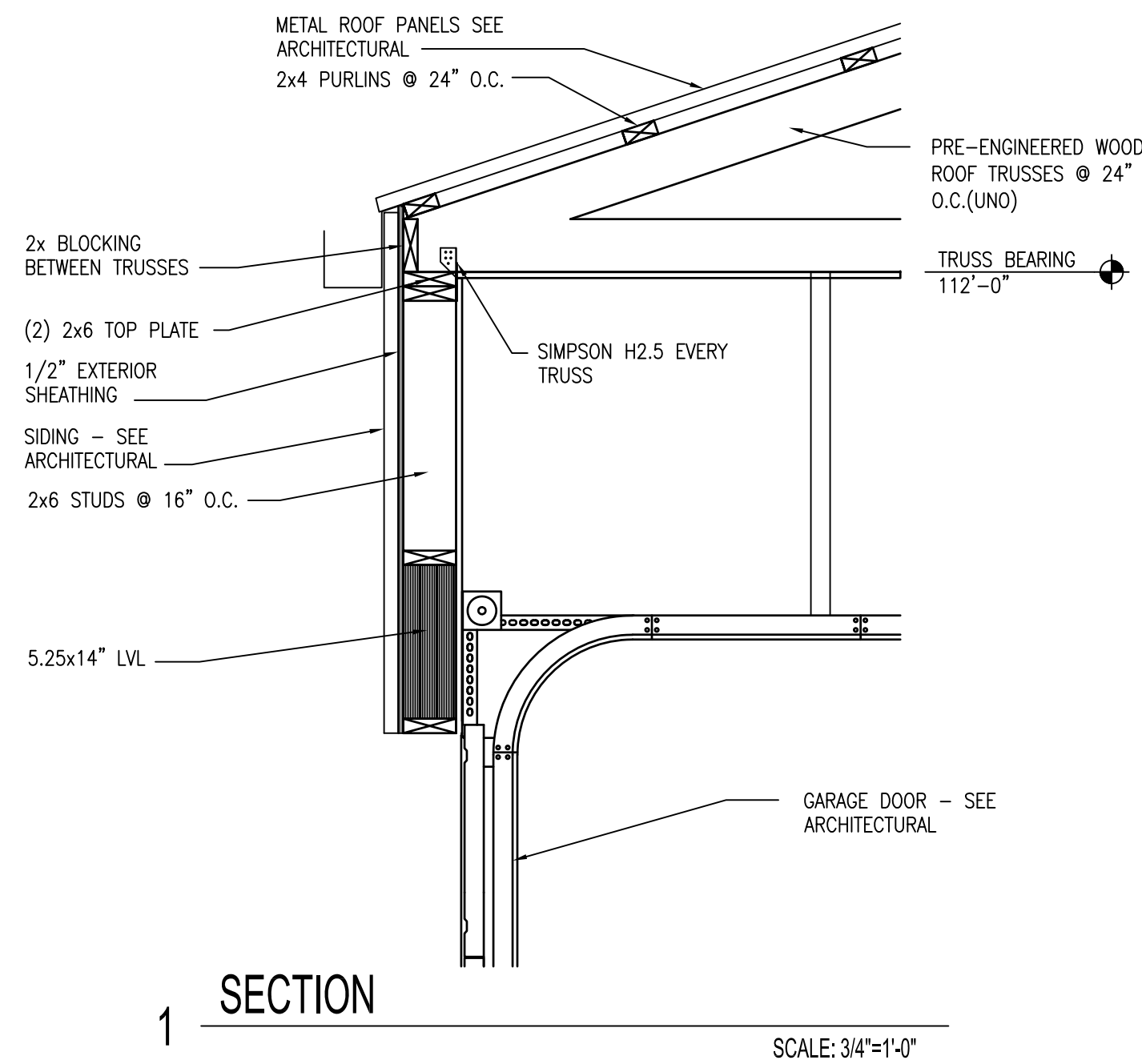
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Date: September 27, 2022

General Notes



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APPROVALS	DATE								
?									
INITIAL									



New Training Building  
Nixa Police Department Shooting Range  
--- Nixa, Christian County, MO 65741

City of Nixa, Missouri  
Nixa, Christian County, MO 65741



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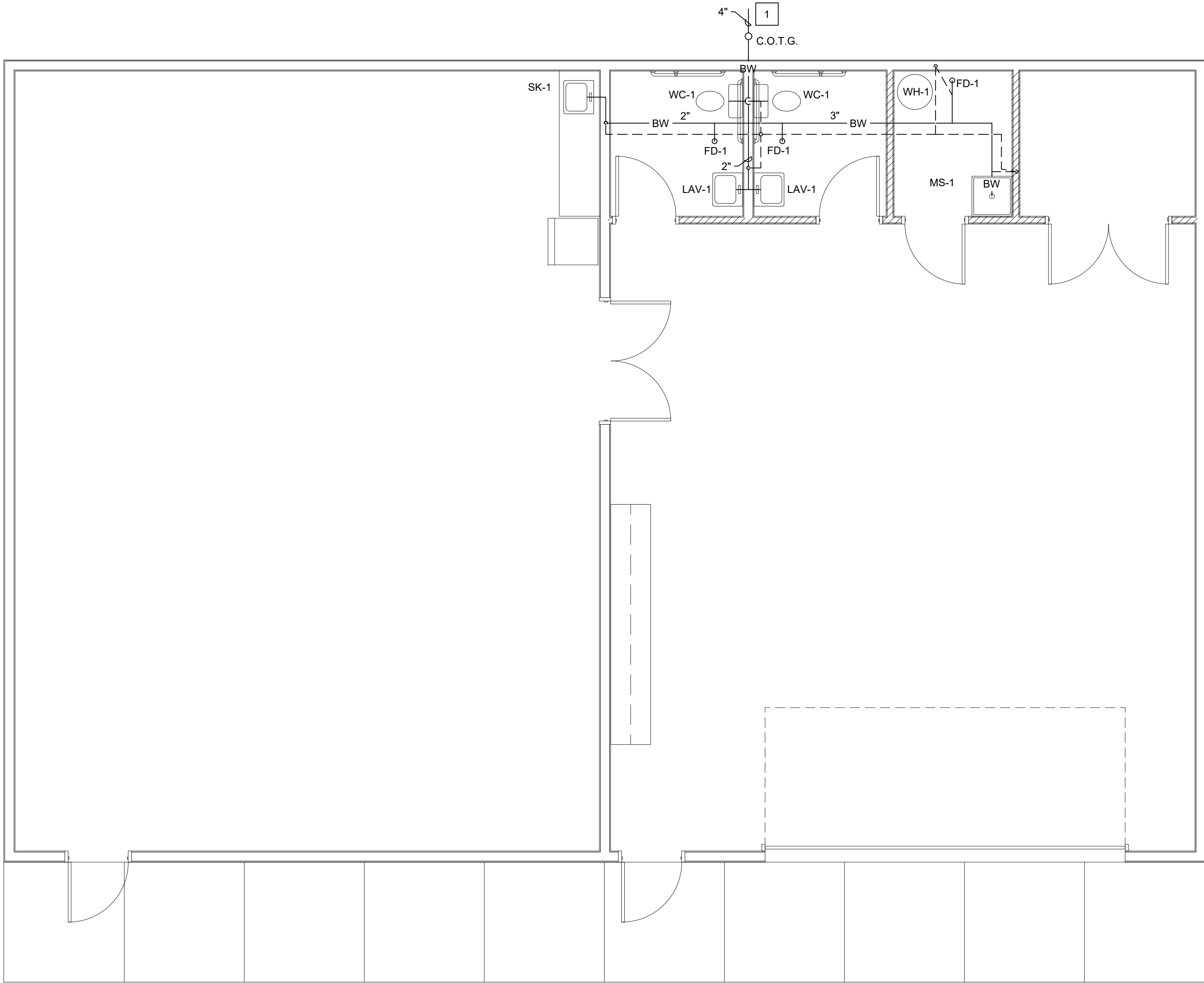
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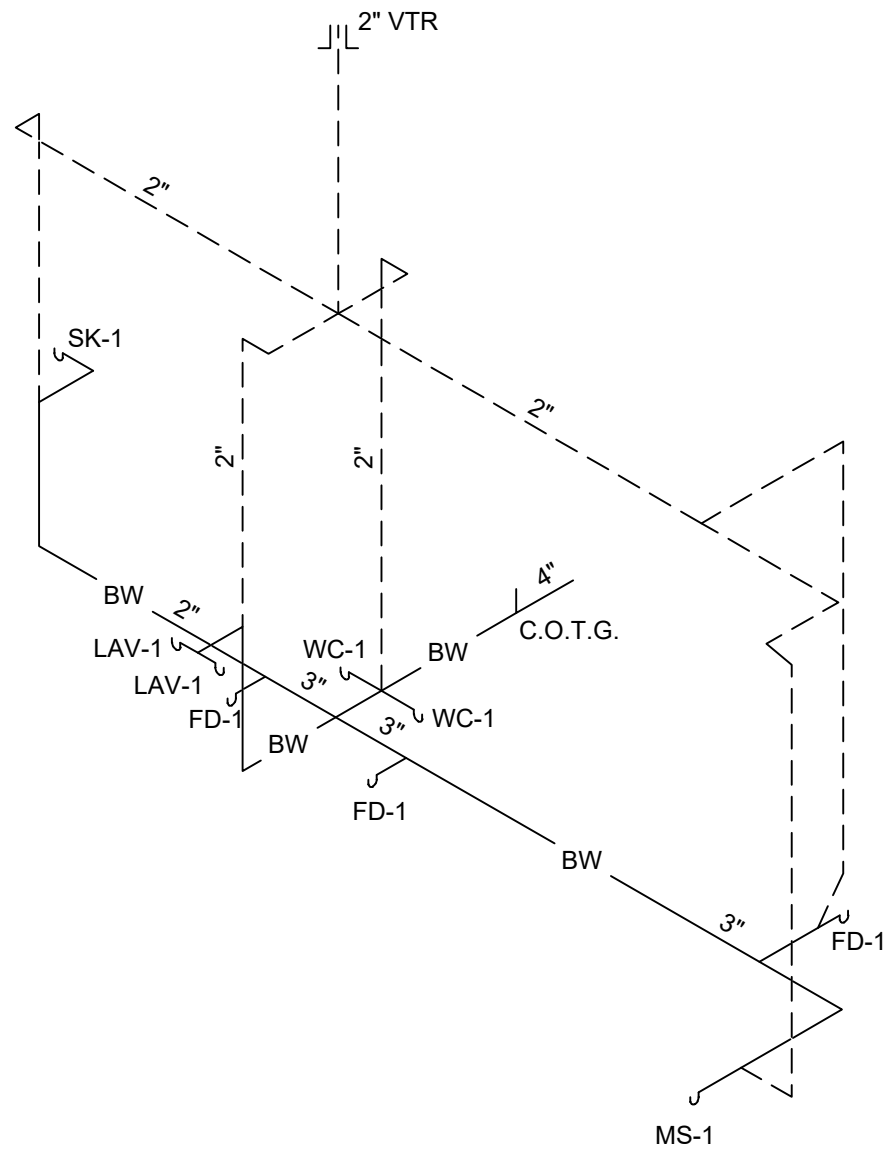






**WASTE PIPING PLAN**  
SCALE: 1/4" = 1'-0"

#	KEYNOTES
1	INSTALL A BACK WATER VALVE PRIOR TO ENTERING BUILDING IN AN ACCESSABLE AREA THEN ROUTE TO EXISTING MAIN WASTE PIPING. SEE CIVIL PLANS FOR WASTE PIPING LOCATION AND CONNECTIONS



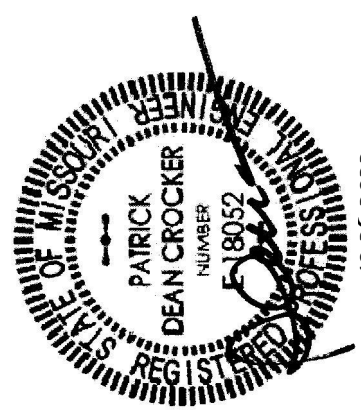
**WASTE PIPING ISOMETRIC**  
NOT TO SCALE

PLUMBING FIXTURE SCHEDULE									
MARK	DESCRIPTION	MANUFACTURER	MODEL	ACCESSORIES	CONN. PIPE SIZE (IN.)				REMARKS
					DCW	DHW	WASTE	VENT	
FD-1	FLOOR DRAIN, 3" OUTLET, CAST IRON, NICKEL BRONZE STRAINER	JR SMITH	2005-A	PRO SET SYSTEMS TRAP GUARD #TG3H (A DIFFERENT MODEL # MAY BE REQUIRED IF FLOOR DRAINS OTHER THAN THOSE SPECIFIED ARE PURCHASED)	N/A	N/A	3	1-1/2	TRAP GUARD IS INTENDED TO COMPLY WITH TRAP PRIMER REQUIREMENTS, GUARD COMPLIES WITH NSF-14, CSA B602-99 AND CSA B79-94 STANDARDS
IMB-1	ICE MAKER BOX	OATEY	38806	INLINE WATER FILTER	1/2"	0	N/A	N/A	PC TO PURCHASE AND INSTALL S.O. VALVES TO MATCH PIPING USED
LAV-1	LAVATORY, WALL HUNG, VITREOUS CHINA, ADA, FAUCET HOLES ON 4" CENTERS	ZURN	Z5344	DELTA #523-HGMHDF-DST SINGLE HANDLE FAUCET W/ OFFSET GRID STRAINER Z8746-PC, CHROME PLATED CAST BRASS ADJUSTABLE "P" TRAP W/ CLEANOUT AND WASTE TO WALL Z8700-PC, WALL CHAIR CARRIER, 3/8" WALL SUPPLIES, INSULATION ON SUPPLY AND WASTE PIPES	1/2	1/2	2	1-1/2	PROVIDE THERMOSTATIC TEMPERATURE CONTROL VALVE . TO COMPLY WITH ASSE1070
MS-1	24X24 MOP SINK	FIAT	MSB-2424	830-AA FAUCET, VACUUM BREAKER & WALL BRACE WITH PAIL HOOK, 832-AA PLATE AND HOSE, 889-CC MOP HANGER, BUMPER GUARD, WALL GUARD FOR ALL ADJACAENT WALLS.	1/2	1/2	2	1-1/2	--
SK-1	KITCHEN SINK, SINGLE BOWL, 22X19, 10" DEEP, STAINLESS STEEL, FAUCET HOLES ON 4" CENTERS, 3-1/2" DRAIN OPENING	ELKAY	DLR221910	CHICAGO #895-GN2AE3ABCP 5-1/4" GOOSENECK FAUCET W/ #369 2-3/8" METAL LEVER HANDLES (ADA COMPLIANT).	1/2	1/2	2	1-1/2	--
WC-1	WATER CLOSET TANK TYPE, ADA (16 1/2" HI1GH), HIGH EFFICIENCY, 1.28 GPF, WHITE ELONGATED, SIPHON JET TOILET	ZURN	Z5555 HET	Z5958SS-EL WHITE ELONGATED SEAT, 1/2 X 3/8 COMP. CHROME ANGLE STOP, APPROPRIATE SUPPLY LINE	1/2	N/A	3	2	--
WH-1	WATER HEATER, 40 GAL., ELECTRIC, 208/240V, (2) 4500 WATT ELEMENTS	STATE	ES640 DORT	TIP RELIEF VALVE, STA-RITE CA15 BLADDER TYPE EXPANSION TANK	3/4	3/4	N/A	N/A	WATER HEATER SET AT 110°F



New Training Building  
Nixa Police Department Shooting Range  
Nixa, Christian County, MO 65741

City of Nixa, Missouri  
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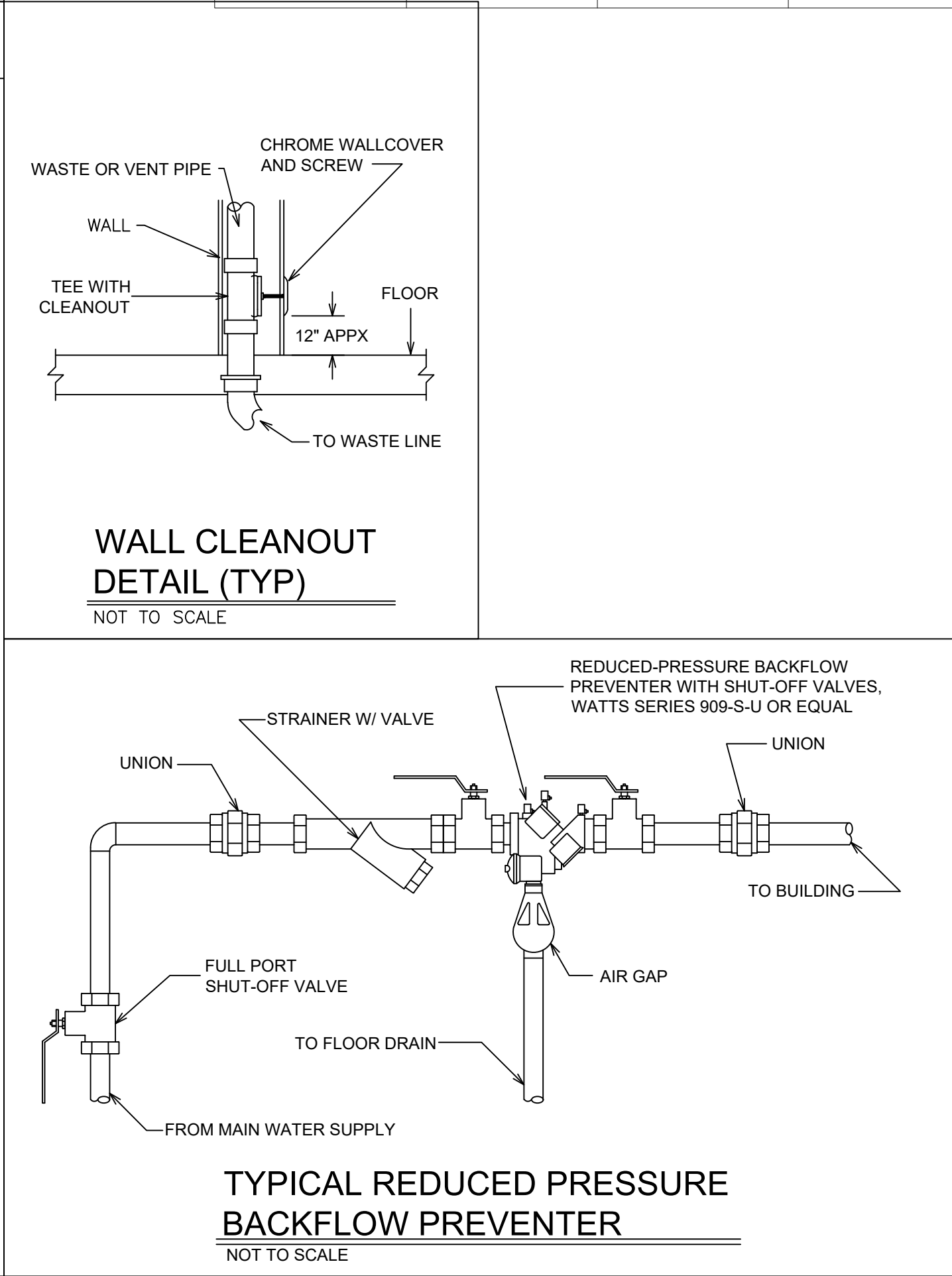
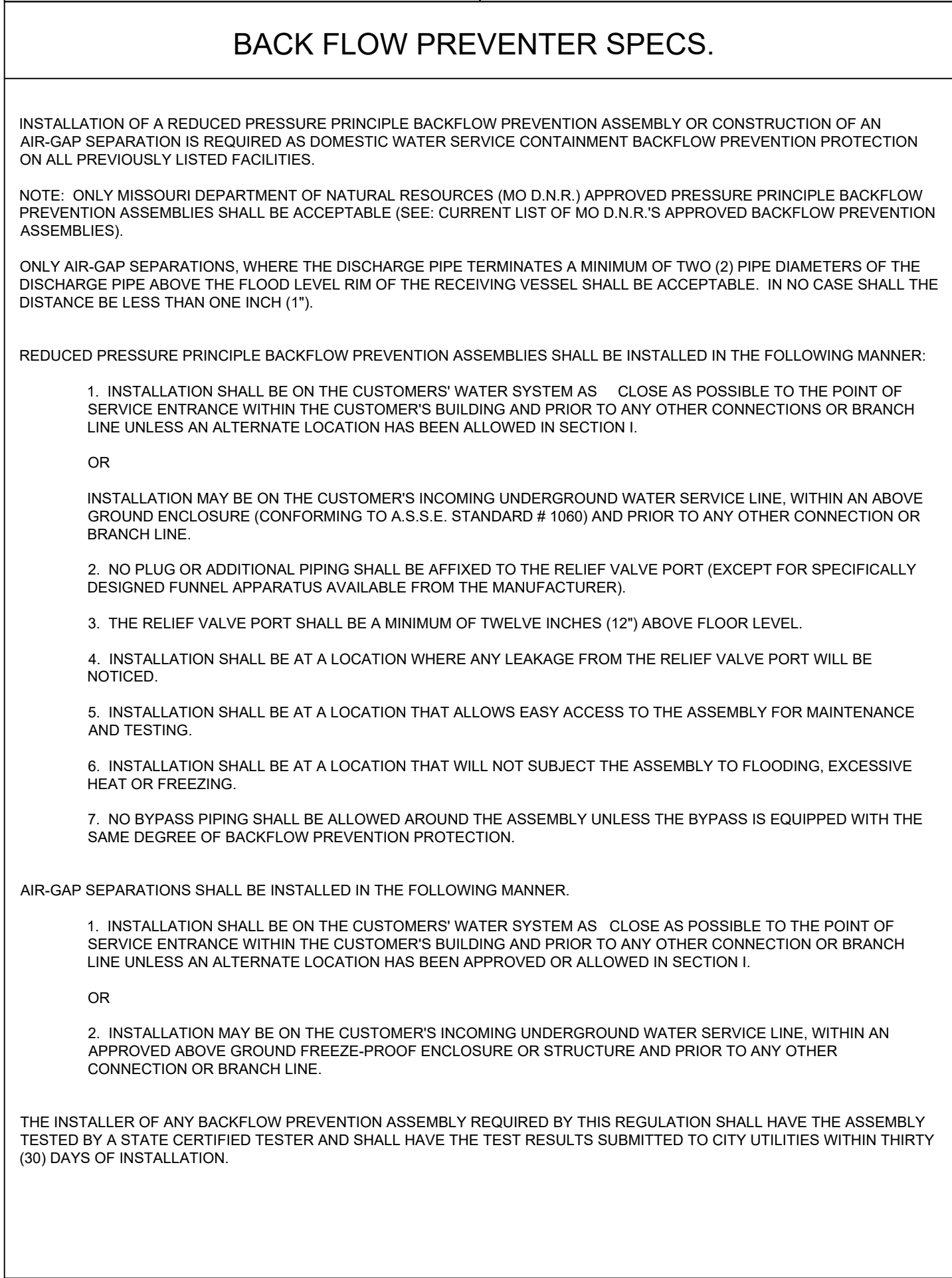
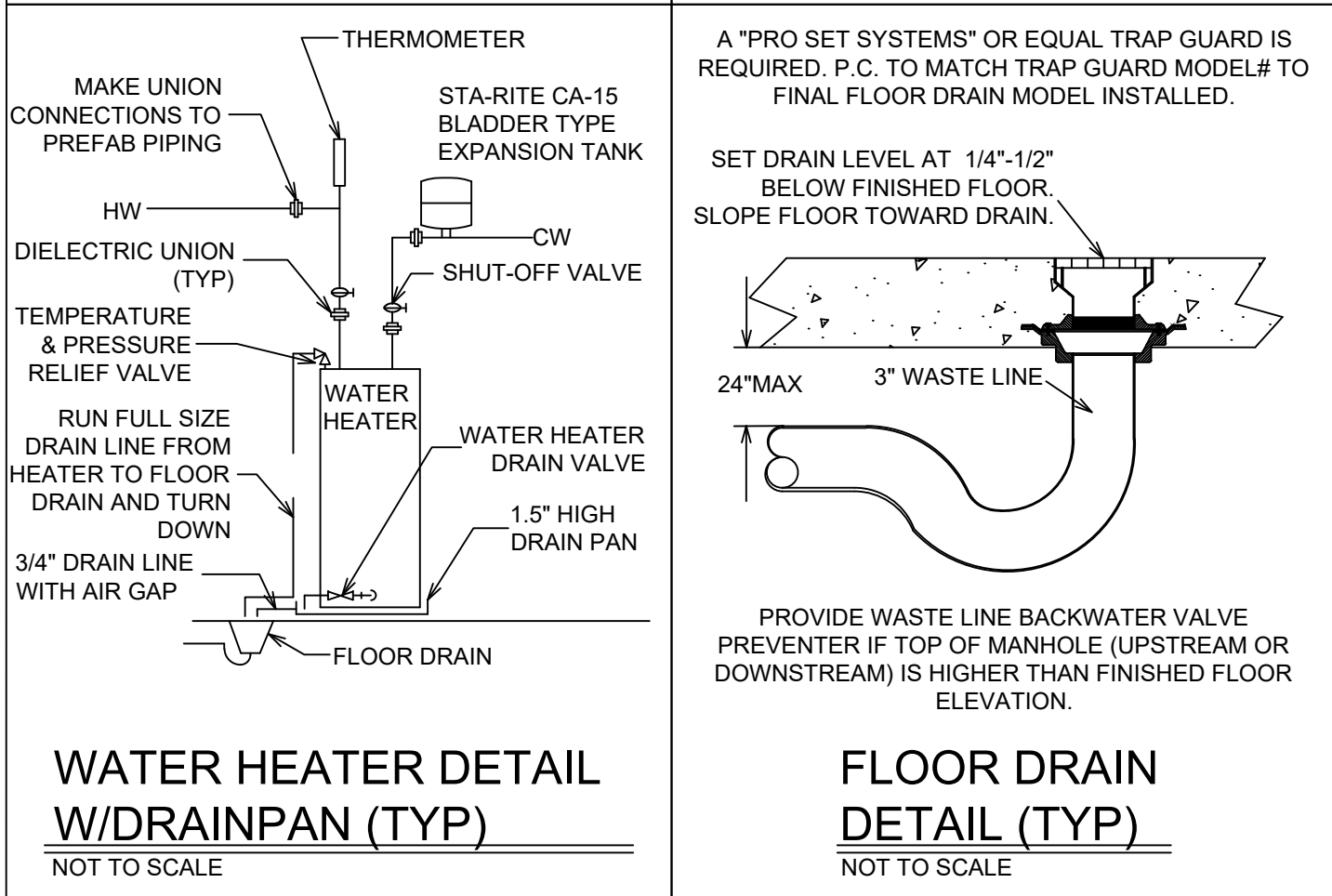
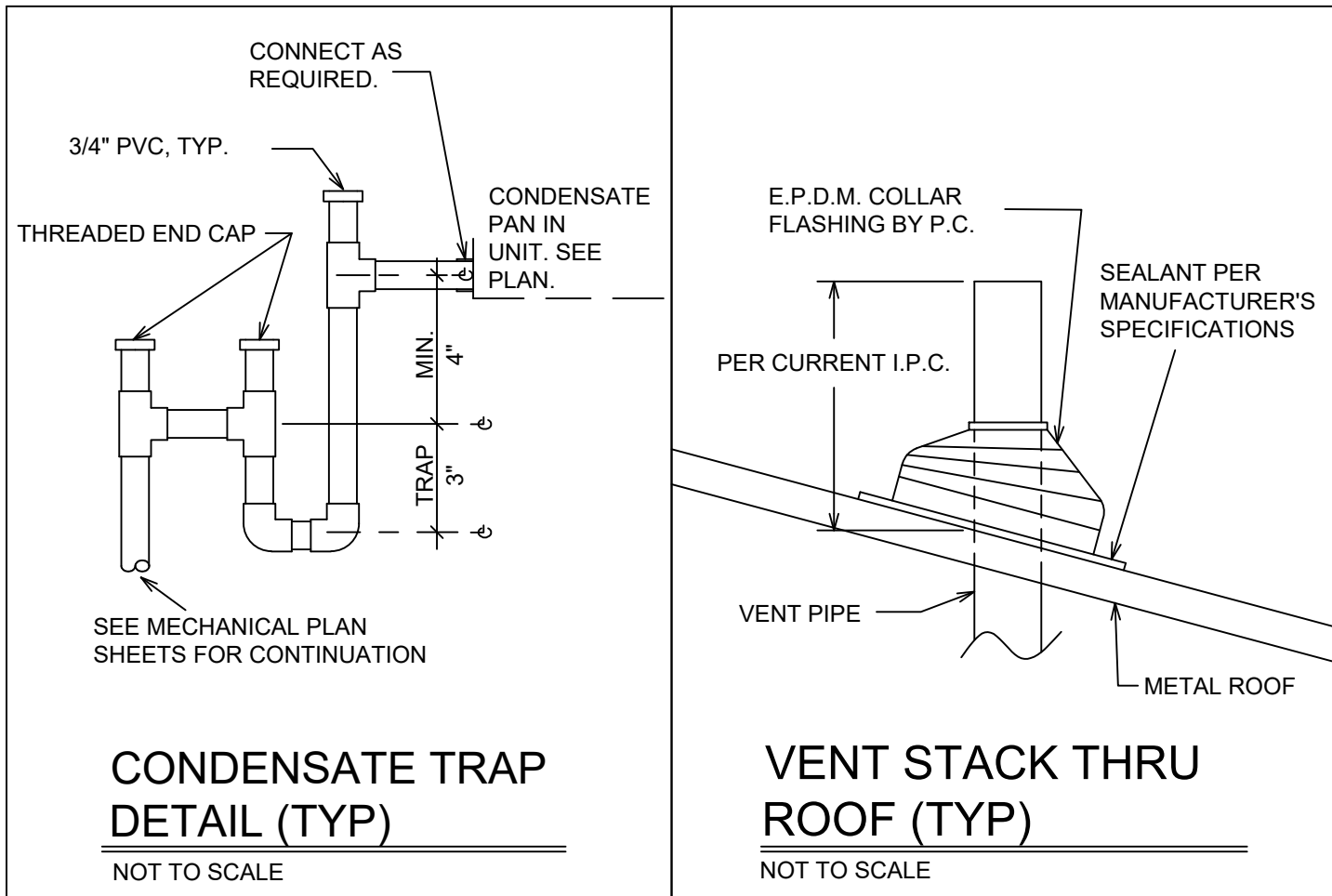
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P1

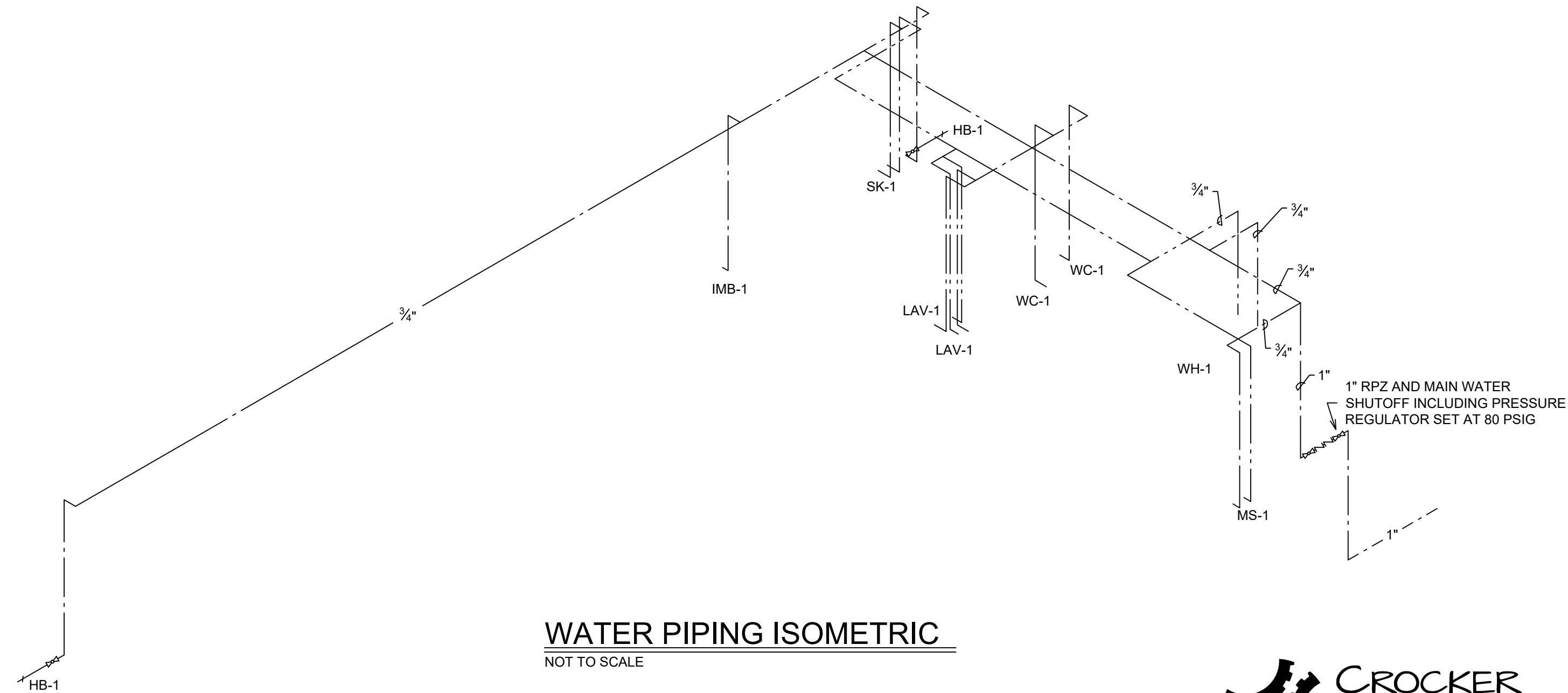
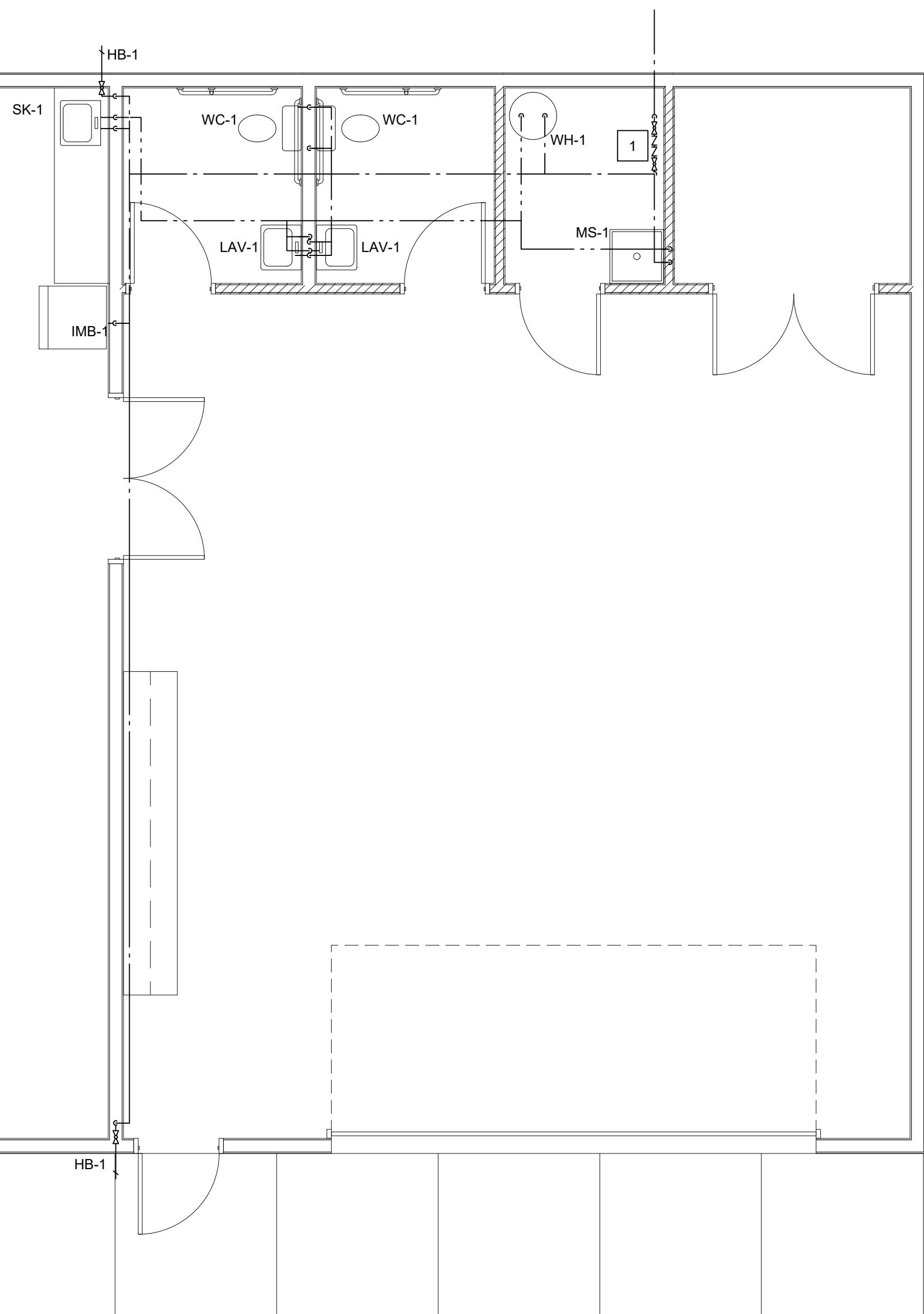


#	KEYNOTES
1	COORDINATE WITH M.C. FOR FINAL PLACEMENT OF MECHANICAL EQUIPMENT AND WATER PIPING IN THIS AREA.



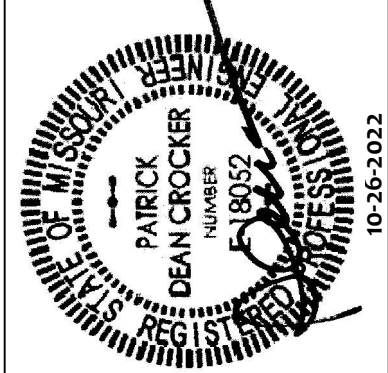
## WATER PIPING PLAN

SCALE: 1/4" = 1'-0"



New Training Building  
Nixa Police Department Shooting Range  
Nixa, Christian County, MO 65741

City of Nixa, Missouri  
Nixa, Christian County, MO 65741



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P2

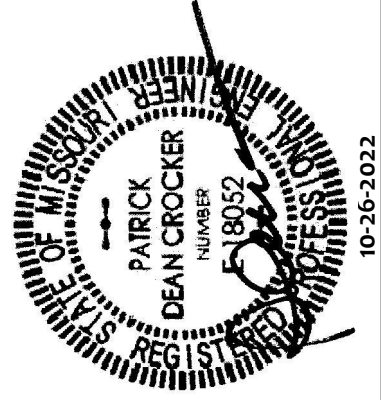


PLUMBING SPECIFICATIONS		PLUMBING SPECIFICATIONS		PLUMBING SPECIFICATIONS		PLUMBING SPECIFICATIONS	
1	THESE PLANS AND SPECIFICATIONS ARE EACH PART OF AN INTEGRATED DESIGN SYSTEM. ANY MODIFICATION, ALTERATION, CHANGE, DELETION, ADDITION, OR SUBSTITUTION, OF OR TO ANY PART OF THE PLANS OR SPECIFICATION COULD RESULT IN PROPERTY DAMAGE, INJURY, OR EVEN DEATH, AND REQUIRES A FULL REVIEW OF THE ENTIRE SYSTEM BY A PROFESSIONAL ENGINEER. ANY UNAUTHORIZED MODIFICATION OF THIS DOCUMENT MAY CONSTITUTE UNLICENSED PRACTICE AS A PROFESSIONAL ENGINEER AND MAY VIOLATE LAWS REGULATING THE PRACTICE OF ENGINEERING.	16	PIPE INSTALLATION-INSTALL ALL PIPING CONCEALED WHERE POSSIBLE, PARALLEL AND PERPENDICULAR TO THE LINES OF THE BUILDING. SUPPORT WITH MANUFACTURED HANGERS IN COMPLIANCE WITH THE PLUMBING CODE. ROOF PENETRATIONS ARE TO BE FLASHED AND WEATHERSEALED. PIPE AND FITTINGS TO BE PROPERLY CLEANED, REAMED, BEVELED AND ASSEMBLED IN A METHOD STANDARD TO THE TRADE FOR THE MATERIAL INVOLVED. JOINING MATERIALS SHALL BE CODE APPROVED FOR THE MATERIALS INVOLVED. SUPPLY PIPING IN EXTERIOR WALLS AND ATTICS SHALL BE INSTALLED ON THE ROOM SIDE OF THE INSULATION. SUPPLY PIPING IN MECHANICAL EQUIPMENT ROOMS SHALL BE LOCATED A MINIMUM OF 36" FROM ANY COMBUSTION AIR INTAKE OPENING. PROVIDE BALL VALVES AND UNIONS AT FIXTURES AND EQUIPMENT FOR MAINTENANCE AND BALL VALVES FOR SYSTEM ISOLATION. BACKFLOW PREVENTION MUST BE IN COMPLIANCE WITH THE CODE. PROVIDE ACCESS PANELS WHERE REQUIRED FOR SERVICE ACCESS TO CONCEALED VALVES AND SPECIALTIES.	40	INSULATE EXPOSED TRAP AND WATER LINES UNDER WALL MOUNTED HANDICAPPED ACCESSIBLE LAVATORIES.	68	CONTRACTOR IS TO PROVIDE SUBMITTALS WHICH SHALL INCLUDE (2) SETS OF SHOP DRAWINGS AND ANY ADDITIONAL INFORMATION REQUIRED FOR INSTALLATION, ADJUSTMENT, OPERATIONS AND MAINTENANCE OF MANUFACTURERS DATA ON ALL FIXTURE DEVICES, VALVES, CONTROLS, PRODUCT SPECIFICATION SHEETS AND PICTORIAL CATALOG CUT SHEETS, WHICH ARE CALLED FOR IN SPECIFICATIONS. IDENTIFY EACH SUBMITTAL BY SPECIFICATION, DIVISION, NUMBER OR BY DESIGNATION ON THE DRAWINGS IN A LETTER OF TRANSMITTAL. THE SHOP DRAWING WILL BE REVIEWED, MARKED UP AND THEN SCANNED IN, AND E-MAILED TO THE SHOP DRAWING DISTRIBUTION LIST, WHICH THEY THEN CAN PRINT AS MANY COPIES AS THEY WISH. SHOP DRAWING DISTRIBUTION: ARCHITECT, OWNERS REPRESENTATIVE, GENERAL CONTRACTOR. ALL SHOP DRAWINGS MUST BE NO LARGER THEN 11"x17" SIZE PER SHEET (SUBMITTALS SHOULD BE SUBMITTED PRIOR TO ORDERING ANY EQUIPMENT.) PURCHASE NO MATERIAL OR EQUIPMENT UNTIL SUBMITTALS HAVE BEEN APPROVED.
				41	IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO COORDINATE ALL INSTALLATION OF NEW WASTE PIPING, WATER PIPING, AND PLUMBING FIXTURES.		
2	THIS APPLIES TO ALL MECHANICAL, ELECTRICAL & PLUMBING DRAWINGS: THESE DRAWINGS AND SPECIFICATIONS ARE NOT DETAILED FABRICATION DRAWINGS TYPICALLY SHOWN IN STEP BY STEP INSTRUCTIONS. THEIR INTENT IS TO ESTABLISH THE MINIMUM STANDARD OF PERFORMANCE THAT IS ACCEPTABLE FOR THIS PROJECT. MAJOR COMPONENTS ARE ITEMIZED AND SHOWN BUT, ALL THE WORK AND EACH INDIVIDUAL DEVICE IS NOT NECESSARILY DESCRIBED OR INDICATED IN INTRICA DETAIL. THE CONTRACTOR IS EXPECTED TO INCLUDE THESE ITEMS IN HIS BID BY HIS FORESIGHT FROM PREVIOUS EXPERIENCE AND/OR WITH A DOLLAR CONTINGENCY AMOUNT FOR UNFORESEEN EXPENSES. THE CONTRACTOR SHOULD BE FAMILIAR WITH THE ARCHITECTURAL, STRUCTURAL, AND CIVIL PLANS ETC. BEFORE MAKING A BID. IF THE CONTRACTOR NEEDS STEP BY STEP INSTRUCTIONS TO COMPLETE THIS WORK OR IF HE IS NOT FAMILIAR WITH THE LOCAL CODES OR THE TYPE OF SYSTEM BEING INSTALLED, HE IS ADVISED NOT TO SUBMIT A BID OR TO WORK ON THIS PROJECT. FIELD MEASURING AND COORDINATING WITH OTHER TRADES IS MANDATORY. ALTHOUGH THE DRAWINGS SHOULD BE SIMILAR TO THE ACTUAL DIMENSIONS, THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE DIMENSIONS OF THE WORK SHOWN. DO NOT SCALE DIMENSIONS OFF THE PLANS FOR FABRICATION. VERIFY WITH FIELD MEASUREMENT. COORDINATE WITH GENERAL CONTRACTOR EACH EQUIPMENT SIZE WITH THE LOCATION WHERE IT IS TO BE INSTALLED BEFORE ORDERING. NOTIFY THE ENGINEER IF SPACE DOES NOT ALLOW FOR EQUIPMENT SPECIFIED. ALL SUCH DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AND IT IS HIS RESPONSIBILITY TO FIT WORK INTO ALLOWED SPACE. ALL OFF-SETS AND SMALL CHANGES IN ROUTING ARE CONSIDERED A PART OF THE SCOPE OF THE BASE BID FOR THIS PROJECT AND SHALL BE APPROVED BY THE ENGINEER OR ARCHITECT BEFORE INSTALLATION.	17	ALL HORIZONTAL WASTE PIPING SHALL BE INSTALLED WITH A MINIMUM UNIFORM GRADE OF 1/4" PER FOOT (IF APPLICABLE) THE GRADE SHOULD NEVER BE LESS THAN 1/8" PER FOOT, UNLESS SPECIFICALLY NOTED BY THE ENGINEER ON THE DRAWINGS.	42	THE PLUMBING CONTRACTOR IS TO BID THE PROJECT AND PERFORM THE WORK FOR A COMPLETE OPERATING SYSTEM. THEREFORE IT SHALL BE UNDERSTOOD THAT ALL ITEMS SHALL BE INCLUDED FOR AN OPERATING SYSTEM WHETHER ALL SPECIFIC FITTINGS AND ACCESSORIES ARE SPECIFIED IN SPECIFICATIONS OR SHOWN ON DRAWINGS.	69	SPECIFICATION REQUIREMENTS ARE THAT THE DIFFERENT TRADES ARE TO COORDINATE WITH EACH OTHER. THE MECHANICAL CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE PLUMBING AND ELECTRICAL SHEETS. THE PLUMBING CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE MECHANICAL AND ELECTRICAL SHEETS. THE ELECTRICAL CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE PLUMBING AND MECHANICAL SHEETS. COORDINATE DOES NOT MEAN "I WAS HERE FIRST".
			18	PIPING HANGERS & SUPPORTS TO CONFORM WITH IPC CODE TABLE 309.5. CONTRACTOR SHALL ISOLATE PIPE HANGERS FROM THE HOT AND COLD WATER PIPING SYSTEMS WITH NEOPRENE PADS. CONTRACTOR SHALL PLACE NEOPRENE PADS BETWEEN PIPE CLAMPS AND HOT AND COLD WATER SYSTEM PIPING.	43	LIMIT OF WORK UNDER THIS CONTRACT SHALL INCLUDE ALL PIPING TO POINT OF CONNECTION TO MAIN SERVICES.	
3	THE ENGINEER, IS NOT RESPONSIBLE FOR FIELD ACTIVITIES ON THIS PROJECT WITHOUT DIRECT INSPECTION OF WORK IN PROGRESS. FIELD INSPECTIONS ARE TO BE COORDINATED BY ARCHITECT. IT IS NEITHER EXPRESSED NOR IMPLIED THAT THE CONTRACTOR CAN CONSTRUCT THIS PROJECT WITHOUT THE ARCHITECT'S FIELD INSPECTIONS. IF FIELD CONDITIONS ARE UNCOVERED THAT REQUIRE A CHANGE OR ADDITIONAL INFORMATION THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY. THE ARCHITECT WILL THEN NOTIFY THE ENGINEER. THE ARCHITECT DOES NOT DELEGATE HIS AUTHORITY TO ANYONE ELSE FOR DETERMINING THE MEANING OF HIS PLANS OR SPECIFICATIONS.	19	PIPE HANGERS SHALL BE OF STANDARD MALLEABLE IRON OR COPPER TUBING SUPPORTS WITH ADJUSTABLE SWIVEL RING FOR ALL GENERAL PIPING. EACH HANGER SHALL BE SUITABLE FOR THE PURPOSE AND CONDITION ENCOUNTERED FOR THE JOB. HANGERS AND STRAPPING MATERIAL SHALL BE APPROVED MATERIAL THAT WILL NOT PROMOTE GALVANIC ACTION. ALL PIPING SHALL BE SUBSTANTIALLY SUPPORTED IN A NEAT AND WORKMANLIKE MANNER AND SHALL BE FREE FROM SAGGING, WITH LOOPS, ETC., AS REQUIRED FOR EXPANSION AND CONTRACTION.	44	PROVIDE PRESSURE REDUCERS IN WATER SUPPLY LINES AS REQUIRED.	70	P.C. IS TO ADAPT TO ROOF AND MAKE SURE ROOF WARRANTY REMAINS INTACT. COORDINATE WITH BUILDING OWNER AND/OR GENERAL CONTRACTOR AS TO TYPE OF ROOF AND MANUFACTURER OF ROOF.
			20	CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR LOCATION OF PIPING HANGERS, SUPPORTS AND INSERTS, ETC., REQUIRED FOR INSTALLATION OF PIPING UNDER THIS CONTRACT. HANGERS SHALL BE SIZED FOR THE FULL SIZE OF THE PIPING INSULATION.	45	MEANS OF PROTECTION AGAINST BACKFLOW WILL BE PROVIDED IN ALL REQUIRED LOCATIONS. (I.E. BACKFLOW PREVENTER WITH INTERMEDIATE ATMOSPHERIC VENT, REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS, ATMOSPHERIC TYPE VACUUM BREAKERS) PROVIDE BACKFLOW PREVENTER IN MAIN WATER LINE TO BUILDING. PC TO INSTALL BFP IN ALL APPLICABLE LOCATIONS TO MEET CODES.	
4	CONTRACTOR IS TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH ALL ON-SITE CONDITIONS. VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING CONDITIONS, AND MAKE CONNECTIONS TO LOCAL UTILITY COMPANY REQUIREMENTS AND IN ACCORDANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS. THE CONTRACTOR IS TO CONTACT THE LOCAL UTILITY COMPANY(S) & TO CONFIRM THE SCOPE OF RESPONSIBILITY FOR ALL UTILITY CONNECTION.	21	CLEANOUTS SHALL BE INSTALLED IN HORIZONTAL LINES WITH A CHANGE IN DIRECTION GREATER THAN 45 DEGREES AND AT INTERVALS NO GREATER THAN 50'.	46	PROVIDE WASTE LINE BACKWATER VALVE PREVENTER IF TOP OF MANHOLE (UPSTREAM OR DOWNSTREAM) IS HIGHER THAN FINISHED FLOOR ELEVATION.	71	PLUMBING FIXTURES MUST BE IN COMPLIANCE WITH THE INTERNATIONAL PLUMBING CODE AND THE AMERICANS WITH DISABILITIES ACT. FAUCETS SHALL COMPLY WITH NSF STANDARD #1, SECTION 9 FOR RESIDENTIAL WATER FAUCETS. FIXTURES SHALL BE WHITE UNLESS A SPECIAL COLOR IS SPECIFIED ON THE SCHEDULES. BATHTUB AND SHOWER FAUCETS MUST BE PRESSURE BALANCED ANTI-SCALD TYPE OPERABLE WITHOUT GRIPPING AND WITH A MAXIMUM OF 5# FORCE. SHOWER HEADS MUST BE MAXIMUM 2.5 GPM FLOW RATE. BATHTUBS MUST HAVE POP-UP WASTE STOPPER WITH GRID DRAIN. HANDICAP TUBS/SHOWERS MUST HAVE SEATS AND GRAB BARS. TANK TYPE WATER CLOSETS MUST HAVE CHROME PLATED METAL TRIP LEVERS. LAVATORY FAUCETS MUST BE METAL SINGLE LEVER TYPE OPERABLE WITHOUT GRIPPING AND WITH A MAXIMUM OF 5# FORCE. PROVIDE CHROME PLATED BRASS SUPPLIES WITH STOPS. P-TRAPS ARE TO BE 17 GAUGE CHROME PLATED BRASS WITH CLEANOUTS. DO NOT USE NONMETALLIC FAUCETS, SUPPLIES OR WASTES. PROVIDE AIR CHAMBERS AT EACH FIXTURE AND WATER HAMMER ARRESTERS WHERE INDICATED. FLUSH VALVE MAXIMUM FLOW RATE FOR WATER CLOSETS, 1.6 GALLON PER FLUSH; FOR URINALS, 1.0 GALLON PER FLUSH.
			22	PIPE TESTING-IN COMPLIANCE WITH PLUMBING CODE. DOMESTIC WATER-TEST AT SYSTEM WORKING PRESSURE. OR, FOR PIPING SYSTEMS OTHER THEN PLASTIC, BY AN AIR TEST NOT LESS THAN 50 PSI. THE WATER UTILIZED FOR TESTS SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY. GAS-PNEUMATIC TEST AT 3 PSIG FOR ONE-HALF HOUR. *PROTECT ALL LOWER PRESSURE RATED APPLIANCES AND EQUIPMENT FROM EXCESSIVE PRESSURE DURING TESTING.	47	ALL WORK TO CONFORM TO CURRENT INTERNATIONAL PLUMBING CODE AND THE CURRENT ADPTIVE ORDINANCES IN EFFECT FOR THE LOCATION WHERE THE PLUMBING IS TO BE INSTALLED.	
5	IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR CONNECTION AND TO COORDINATE ALL UTILITY SERVICES TO THE FACILITIES/BUILDING. THE CONTRACTOR IS TO INCLUDE ALL COSTS, FEES, CHARGES, ETC. ASSOCIATED WITH THE CONNECTION OF NEW SERVICES (OR IN THE EVENT OF RENOVATIONS TO AN EXISTING BUILDING, MODIFICATIONS TO EXISTING SERVICES) FOR THE BUILDING. ALL WORK IS TO BE DONE IN ACCORDANCE WITH ALL LOCAL CODES, THE UTILITY COMPANY(S) STANDARDS, AND THE CURRENT INTERNATIONAL BUILDING CODE. COORDINATE ALL ROUGH-INS WITH THE OWNER.	23	EXCAVATION AND BACKFILL-PROVIDE STREET PLATES, BARRICADES, WARNING LIGHTS, SHORING, BRACING AND DE-WATERING AS REQUIRED. CONDUCT EXCAVATIONS SO THAT WALLS, FOOTINGS AND ADJOINING PROPERTY ARE NOT DISTURBED OR INJURED. BACKFILL WITH ALLOWANCE MADE FOR SETTLEMENT, WITH MATERIAL CONTAINING ROCK NO LARGER THAN 6". DISPOSE OF SPOILS AS DIRECTED BY THE ARCHITECT. MAKE STREET CUTS IN COMPLIANCE WITH THE LOCAL STREET OR HIGHWAY DEPARTMENT REQUIREMENTS. WHEN AVAILABLE REFER TO TEST HOLE INFORMATION ON ARCHITECTURAL DRAWINGS OR SPECIFICATIONS.	48	PROVIDE A SAFETY PAN UNDER WATER HEATER(S) THAT ARE MOUNTED OVERHEAD. SAFETY PAN TO HAVE 3/4" TRAPPED PIPE OUTLET, WHICH IS TO BE ROUTED TO AN INDIRECT WASTE RECEPTOR.	72	NO CONDUIT, PIPING, DUCTS, EQUIPMENT, ETC., SHALL BE ROUTED THROUGH OR ABOVE THE ELEVATOR EQUIPMENT ROOM EXCEPT WHAT IS NECESSARY FOR THE OPERATION OF THE ELEVATOR EQUIPMENT.
			24	THE PLUMBING CONTRACTOR SHALL FURNISH A SET OF "AS BUILT" DRAWINGS AT THE COMPLETION OF THE JOB. THESE DRAWINGS SHALL BE NEATLY MARKED PRINTS OF THE PLUMBING PLANS. MAINTAIN A REPRODUCIBLE SET OF CONTRACT DRAWINGS AND SHOP DRAWINGS IN CLEAN, UNDAMAGED CONDITION, WITH MARKUP OF ACTUAL INSTALLATIONS WHICH VARY SUBSTANTIALLY FROM THE WORK AS ORIGINALLY SHOWN, MARK COVER SHEETS, AND PRINT SUITABLE TITLES, DATE AND OTHER IDENTIFICATION ON COVER OF EACH SHEET.	49	TEMPERED WATER SHALL BE SUPPLIED THROUGH A WATER TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 AND SHALL LIMIT THE TEMPERED WATER TO A MAXIMUM OF 110°F. THIS PROVISION SHALL NOT SUPERSEDE THE REQUIREMENT FOR PROTECTIVE SHOWER VALVES. THIS SHALL BE REQUIRED FOR ALL HAND LAVATORIES AND HAND SINKS.	
6	WATER SERVICE: CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND OWNER TO ARRANGE FOR WATER SERVICE MODIFICATION AS INDICATED ON DRAWINGS. CONTRACTOR SHALL CONTACT THE LOCAL WATER DEPARTMENT AND ARRANGE FOR WATER SERVICE AS INDICATED ON DRAWINGS. INCLUDE ALL COSTS, CHARGES, FEES, ETC., INCURRED BY LOCAL AUTHORITIES INTO BID. PROVIDE ALL MATERIALS AS REQUIRED BY LOCAL AUTHORITIES FOR WATER SERVICE INSTALLATION AND/OR MODIFICATION. ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT INTERNATIONAL PLUMBING CODE (IPC) AND WITH THE REQUIREMENTS OF LOCAL AUTHORITIES NORMALLY, THE UTILITY COMPANY SHALL MAKE THE MAIN TAP AND PROVIDE THE METER AND METER PIT AS WELL AS ALL PIPING, TRENCHING AND BACKFILL FROM THE WATER MAIN TO THE METER. NORMALLY THE CONTRACTOR SHALL PROVIDE ALL PIPING AS WELL AS ASSOCIATED TRENCHING AND BACKFILL FROM THE METER TO THE BUILDING. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM WHAT IS OR IS NOT PROVIDED BY THE UTILITY COMPANY AND TO INCLUDE ALL COST TO PROVIDE A WATER TAP/CONNECTION INTO HIS BID.	25	CONTRACTOR IS TO SUPPLY SIX (6) SETS OF MFGS DATA AND SHOP DRAWINGS, DIAGRAMS AND/OR DIMENSIONED PRINTS WHICH ARE CALLED FOR IN SPECIFICATIONS. ALL FIXTURES SCHEDULED, VALVES, INSULATION AND SPECIAL ITEMS. (SUBMITTALS SHOULD BE PRIOR TO ORDERING ANY EQUIPMENT.) PURCHASE NO MATERIAL OR EQUIPMENT UNTIL SUBMITTALS HAVE BEEN APPROVED.	50	INSTALL WATER FLUSH LEVER AWAY FROM THE WALL ON THE OPEN SIDE OF STALL FOR EASY ACCESS ON ADA WATER CLOSET. SEE WATER PIPING PLAN FOR LAYOUT DETAILS.	73	IF THERE IS AN ELEVATOR EQUIPMENT ROOM THE PLUMBING CONTRACTOR SHALL PROVIDE A FLOOR DRAIN IN ALL ELEVATOR EQUIPMENT ROOMS FOR AIR CONDITIONER CONDENSATE WHETHER THE FLOOR DRAIN IS SHOWN ON THE PLANS OR NOT.  APPLICABLE CODES  IMC 2018 IPC 2018 IFGC 2018 NEC 2017
			26	THE PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR ALL FEES, PERMITS, LICENSES AND INSPECTIONS NECESSARY IN CONNECTION WITH THE WORK COVERED BY THESE DRAWINGS.	51	WHERE WATER AND SEWER LINES CROSS (UNDER GROUND), WATER LINE IS TO BE AT LEAST 1' FOOT ABOVE OR 10' APART. OR SLEEVED IF NOT ABLE TO SEPARATE	
7	SEWER SERVICE: CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND OWNER TO ARRANGE FOR SEWER SERVICE MODIFICATION AS INDICATED ON DRAWINGS. CONTRACT THE LOCAL AUTHORITIES AND ARRANGE FOR SEWER SERVICE AS INDICATED ON DRAWINGS. INCLUDE ALL COSTS, CHARGES, FEES, ETC., INCURRED BY LOCAL AUTHORITIES INTO BID. PROVIDE ALL MATERIALS AS REQUIRED BY LOCAL AUTHORITIES FOR SEWER SERVICE INSTALLATION AND OR MODIFICATION. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT INTERNATIONAL PLUMBING CODE (IPC) AND WITH THE REQUIREMENTS OF LOCAL AUTHORITIES. NORMALLY THE CONTRACTOR SHALL MAKE THE SEWER TAP. BE RESPONSIBLE FOR ALL PIPING AND ASSOCIATED TRENCHING, AND BACK FILL FROM THE SEWER CONNECTION POINT TO THE BUILDING. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM WHAT IS OR IS NOT PROVIDED BY THE UTILITY COMPANY AND TO INCLUDE ALL COST TO PROVIDE A COMPLETE SEWER SERVICE INSTALLATION/CONNECTION INTO HIS BID. PROVIDE WASTE LINE BACKWATER VALVE IN ACCESSIBLE PLACE IF EITHER TOP OF MANHOLE (UPSTREAM OR DOWNSTREAM) IS HIGHER THAN FINISHED FLOOR ELEVATION.	27	CONTRACTOR SHALL SCHEDULE AND EXECUTE ALL WORK WITH REGARD TO THE OWNER'S USE OF THE BUILDING, BOTH EXISTING AND NEW.	52	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE WORK. CUT NO STRUCTURAL MEMBERS WITHOUT APPROVAL BY THE ARCHITECT/ENGINEER. ALL PATCHING SHALL MEET THE APPROVAL OF THE ARCHITECT/ENGINEER. MUTILATION OF BUILDING FINISHES CAUSED BY THE INSTALLATION OF THE WORK SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE APPROVAL OF THE ARCHITECT/ENGINEER.	74	ALL PENETRATIONS THROUGH THE ROOF, THE FLOOR, OR EXTERIOR WALLS SHALL BE SEALED, CAULKED, GASKETED, OR WEATHER-STRIPPED TO MINIMIZE AIR LEAKAGE.
			28	THE PLUMBING CONTRACTOR SHALL INSPECT THE JOB SITE AND REVIEW THE PLANS. ANY DEVIATIONS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING. REQUESTS FOR ADDITIONAL FUNDS FOR EXTRA WORK WILL NOT BE HONORED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER. PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING AND NEW CONDITIONS.	53	CONFIRM VOLTAGE FOR PLUMBING FIXTURES SPECIFIED, (THAT REQUIRE ELECTRICAL), WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING FIXTURES. (EXAMPLE: GARBAGE DISPOSALS)	
8	ALL PLUMBING SHALL BE INSTALLED PER IPC, ADOPTED CITY, AND STATE CODES. ALL PIPING SHALL BE CONCEALED EXCEPT WHERE NOTED. WATER AND VENT PIPING SHALL BE ROUTED AS NEAR AS POSSIBLE TO THE CEILING AND IN THE WALLS. DRAIN AND WASTE PIPING SHALL BE BELOW FLOOR AND IN WALLS, EXCEPT WHERE NOTED. ALL COLD AND HOT WATER LINES SHALL BE ROUTED ABOVE CEILING AND SHALL BE INSULATED. HOT AND COLD WATER PIPING SYSTEMS SHALL NOT TOUCH THE BUILDING STRUCTURE OR WALLS. ALL PIPE PENETRATIONS THROUGH CONCRETE SHALL BE PROTECTED FROM CORROSION DUE TO DIRECT CONTACT WITH CONCRETE.	29	CONTRACTORS ARE TO VISIT THE JOB SITE, TO INSPECT ANY AND ALL EQUIPMENT AT THE SITE, TO INSPECT ANY AND ALL EQUIPMENT THAT IS BEING PURCHASED AND/OR MOVED FROM ANOTHER LOCATION OR SITE TO THE NEW SITE, TO CHECK ANY AND ALL NAMEPLATES AND TO VERIFY UTILITY REQUIREMENTS, THEN TO VERIFY, CONFIRM AND COORDINATE WITH THE DRAWINGS. DISCREPANCIES ARE TO BE COORDINATED WITH THE ENGINEER. CONTRACTOR INSPECTIONS AND VERIFICATIONS ARE TO BE PRIOR TO PREPARING THE NEW SITE.	54	CONTRACTOR IS TO FOLLOW ALL MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION OF EQUIPMENT.	75	FREEZELESS HOSEBIBB SHALL BE INSTALLED WITH A DOWNWARD SLOPE TOWARD THE EXTERIOR TO ALLOW PROPER DRAINAGE TO MINIMIZE THE POTENTIAL OF FREEZING.
			30	ALL MATERIALS AND EQUIPMENT MUST BEAR THE UNDERWRITERS LABORATORY APPROVAL LABEL.	55	CONTRACTOR(S) TO HAVE AT LEAST 5 YEARS OF EXPERIENCE WITH SYSTEMS OR SIMILAR SYSTEMS AS SHOWN ON PLANS AND SPECIFICATIONS. (PROVIDE LIST OF CUSTOMERS ACCORDINGLY.)	
9	ALL WATER PIPING SHALL BE RECTILINEAR WITH THE BUILDING.	31	CONTRACTOR SHALL SCHEDULE AND EXECUTE ALL WORK WITH REGARD TO THE OWNER'S USE OF THE BUILDING, BOTH EXISTING AND NEW.	56	GUARANTEE ALL EQUIPMENT, MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF ACCEPTANCE.	76	
			32	MAIN WATER SUPPLY PIPING SHALL BE SCHEDULE 80 PVC FOR ALL PIPING UNDER FLOOR LEVEL. ALL WATER PIPING SHALL BE TESTED AND ANY LEAKS OR DEFECTS CORRECTED.	57	PROTECT ALL STORED AND INSTALLED MATERIALS AND EQUIPMENT FROM DAMAGE.	
10	ALL RISERS TO FIXTURES ARE 1/2" UNLESS NOTED OTHERWISE.	33	PEX (CROSS LINKED POLYETHYLENE) PIPING AND APPROVED FITTINGS MAY BE USED FOR HOT AND COLD WATER PIPING INSIDE OF THE BUILDING IN LIEU OF COPPER PIPING UNLESS NOTED OTHERWISE. MATERIALS AND INSTALLATION MUST COMPLY WITH CURRENT I.P.C. AND ALL LOCAL ORDINANCES	58	WATER HEATERS SHALL BE UL LISTED AND SHALL MEET ASHRAE STD. 90A ENERGY CONSUMPTION GUIDELINES. HEATERS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 150 PSI. HEATERS AND STORAGE TANKS WITH CAPACITIES OVER 119 GALLONS, OVER 199,000 BTUH INPUT OR OVER 209°F DUTY SHALL BE ASME CONSTRUCTED AND LABELED.	60	SERVICE VALVES (SHUT OFF VALVES) LOCATED IN AN ACCESSIBLE, SERVICEABLE LOCATION ARE TO BE PROVIDED FOR HOSE BIBS.
			34	NEW VALVES SHALL BE PROVIDED AND INSTALLED ON ALL LINES TO INDIVIDUAL EQUIPMENT AND FIXTURES FOR SHUT OFF AND MAINTENANCE. ALL FIXTURES SHALL BE INSTALLED WITH WATER STOPS, TRAPS AND ALL OTHER HARDWARE REQUIRED FOR COMPLETE INSTALLATION AND OPERATION.	59	WATER HEATERS SHALL BE PROVIDED WITH HEAT TRAPS ON BOTH THE INLET AND OUTLET PIPING.	
11	WATER CLOSETS SHALL HAVE 4" SOIL LINES UNLESS NOTED OTHERWISE.	35	ALL WATER SERVICE SHALL BE RUN OVERHEAD AND INSIDE THE WALLS FOR THE DROPS TO THE FIXTURES	61	THE P.C. IS RESPONSIBLE FOR REMOVING ALL MAINTENANCE AND INSTALLATION MANUALS AND INSTRUCTIONS FROM COMPONENTS THAT HE IS INSTALLING AND GIVING SUCH DATA TO THE OWNER AND/OR TENANT.	62	ALL ITEMS EXPOSED TO THE EXTERIOR ARE TO BE "PAINTED TO MATCH ADJACENT MATERIALS." IT IS THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE THIS IN HIS COSTING AND TO BE RESPONSIBLE FOR THIS.
			36	THE PLUMBING CONTRACTOR SHALL SUPPLY AND INSTALL NEW REST ROOM FIXTURES INCLUDING HANDICAPPED FIXTURES AND OTHER EQUIPMENT AS SHOWN ON THE DRAWING. CONTRACTOR TO INSTALL ALL NEW EQUIPMENT SUPPLIED BY HIM AND THE OWNER AS SHOWN ON THE PLAN.	63	WATER LINES ARE TO BE DISINFECTED BEFORE BEING PLACED IN USE. AFTER FINAL PRESSURE TESTING OF THE WATER DISTRIBUTION SYSTEM THOROUGHLY FLUSH ENTIRE SYSTEM WITH WATER UNTIL FREE OF DIRT AND CONSTRUCTION DEBRIS. THE LINES ARE TO BE FLUSHED WITH CLEAN WATER UNTIL THE WATER AT EACH OUTLET IS VISIBLY FREE OF FOREIGN PARTICLES. THE LINES WILL THEN BE FILLED WITH WATER AND ISOLATED FROM THE WATER MAIN BY CLOSING THE MAIN VALVE. CHLORINE WILL BE ADDED TO THE WATER IN THE LINES UNTIL A MINIMUM CONCENTRATION OF 50PPM IS REACHED UNTIL TESTS INDICATE NON-SPORE-FORMING BACTERIA HAVE BEEN DESTROYED OR FOR 24 HOURS, WHICHEVER IS GREATER. ALL POINTS IN SYSTEMS SHALL HAVE AT LEAST 10 PPM OF SOLUTION AT END OF RETENTION PERIOD. OPEN AND CLOSE EACH VALVE AT LEAST SIX TIMES IN SYSTEM DURING STERILIZATION TO STERILIZE VALVE PARTS. THE LINES WILL THEN BE FLUSHED AND IF TESTING SHOWS WATER TO BE SUITABLE THE LINES WILL BE PLACED INTO SERVICE. SEE IPC610.1 FOR REQUIRED CONCENTRATION. DISINFECT THE POTABLE WATER SYSTEM IN COMPLIANCE WITH THE INTERNATIONAL PLUMBING CODE, SECTION 611.1.	
12	SAFETY-ADHERE TO OSHA REGULATIONS AND TO PLUMBING INDUSTRY SAFETY PRACTICES.	37	ALL PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE FIRESTOPPED. INTUMESCENT CAULK WITH COLLAR SHALL BE USED ON ALL PENETRATIONS WITH PVC OR OTHER NONMETALLIC PIPE. USE FIRE CAULK THAT IS LISTED FOR THE SPECIFIC ASSEMBLY BEING PENETRATED AND FOR THE SIZE AND TYPE OF MATERIAL THAT PENETRATES THE ASSEMBLY.	64	ALL NEW ABOVE GRADE WATER LINES INCLUDING THOSE IN WALLS AND ABOVE CEILING (BOTH HOT AND COLD) SHALL BE WRAPPED IN 1/2" THICK AR ARMAFLEX INSULATION WITH ARMSTRONG S20 ADHESIVE.	65	CONTRACTOR SHALL VERIFY EXISTING UTILITIES LOCATIONS AND INVERTS PRIOR TO PLACEMENT OF SERVICES.
			38	DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE SCALED FOR DIMENSIONS. REFER TO ARCHITECTURAL DWGS AND FIELD MEASUREMENTS FOR FINAL DIMENSIONS. SEE ARCH. DRAWINGS FOR EXACT LOCATION OF PLUMBING FIXTURES.	66	ALL PIPE VENTS THROUGH ROOF (TO BE IN AN INCONSPICUOUS LOCATION).	
13	NEW VENT LINES SHALL BE SCH.40 PVC. NEW WASTE PIPING ABOVE AND BELOW SLAB SHALL BE SCH.40 PVC. WASTE PIPING BELOW GRADE OUTSIDE OF SLAB SHALL BE SCH.40 PVC AND SCH.80 PVC IN HEAVY TRAFFIC AREAS SUBJECT TO DAMAGE. ALL VENTING SHALL CONFORM WITH IPC.	39	THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL LOCATION OF THE EQUIPMENT BASED ON THEIR APPROXIMATE LOCATIONS AS INDICATED ON THE DRAWINGS. THIS RESPONSIBILITY INCLUDES AVOIDING INTERFERENCE WITH THE BUILDING STRUCTURE, PIPING SYSTEMS AND ELECTRICAL WORK.	67	NEW HAMMER ARRESTERS SHALL BE INSTALLED ON ALL HOT AND COLD WATER SUPPLY LINES AT FIXTURES HAVING "QUICK OPEN/CLOSE" CHARACTERISTICS. (I.E. FAUCETS, FLUSH VALVES, CONTRA VALVES, ETC.) ARRESTERS TO BE INSTALLED IN BRANCH LINES AND ARE TO BE SIZED AT THE SAME SIZE AS BRANCH LINES. MODEL I.R. SMITH HYDRO TROL #5000 (BELLOW OR PISTON TYPE). HAMMER ARRESTERS TO BE ACCESSIBLE FOR SERVICING.	68	
14	PIPE MATERIALS - AS ALLOWED BY THE INTERNATIONAL PLUMBING CODE AND AS ACCEPTABLE TO LOCAL BUILDING AUTHORITIES. *POTABLE WATER SERVICE TYPE K COPPER, ASTM B88; PE CTS TUBING ASTM D2737; PVC SCH.40 ASTM D1785; PVC SDR 26 ASTM D2672 BELL END OR PVC SDR 26 ASTM D2241 GASKET JOINT *DRAIN, WASTE AND VENT-PVC SCH. 40 DWV SOLVENT WELD PIPE AND FITTINGS *BUILDING SEWER-PVC SDR 35 ASTM D3034 GASKET JOINT PIPE AND FITTINGS, SCH.40 *WATER DISTRIBUTION PIPE-ABOVE GRADE TYPE L HARD	15				69	



New Training Building  
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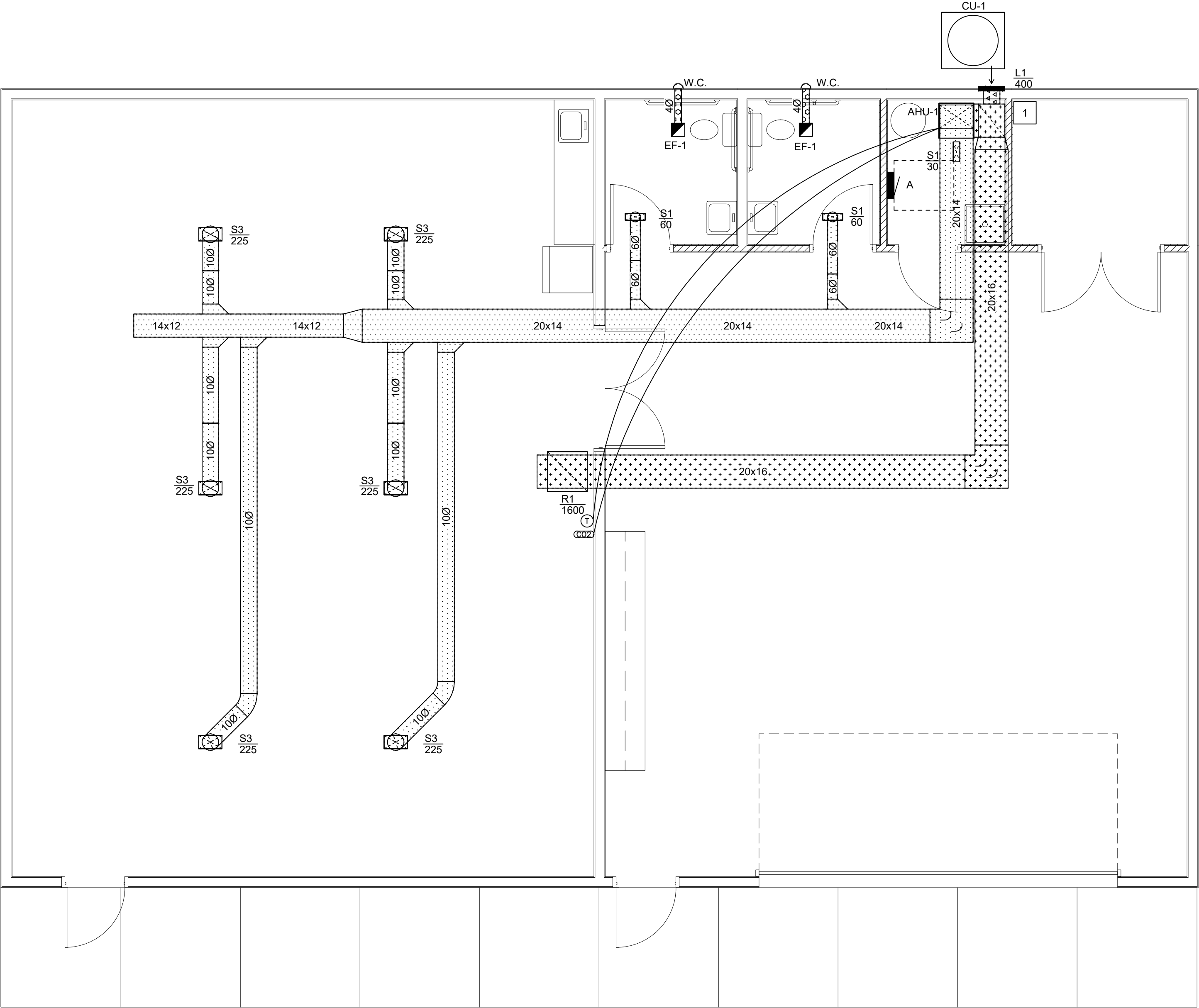
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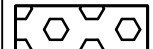
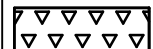



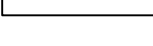
P3





 **MECHANICAL PLAN**  
SCALE: 1/4" = 1'-0"

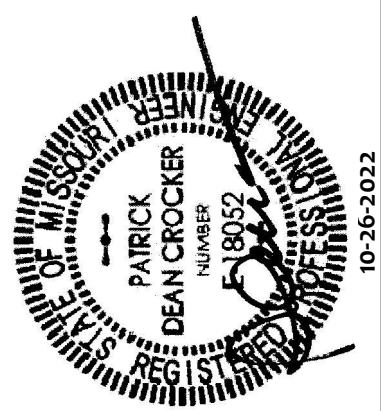
#	KEYNOTES
1	OUTSIDE AIR SET AT 400 CFM. WITH ELECTRIC DAMPER MOTOR CONTROLLED BY CARBON DIOXIDE SENSOR. CARBON DIOXIDE SENSOR TO OPEN OUTSIDE AIR DAMPER WHEN LEVEL IS GREATER THEN 700PPM THEN CLOSE WHEN LEVEL IS BELOW 700PPM

MECHANICAL LEGEND	
	SUPPLY DUCT
	RETURN DUCT
	EXHAUST DUCT
	OUTSIDE AIR
	WALL CAP
	THERMOSTAT
	CARBON DIOXIDE SENSOR
	PANELBOARD



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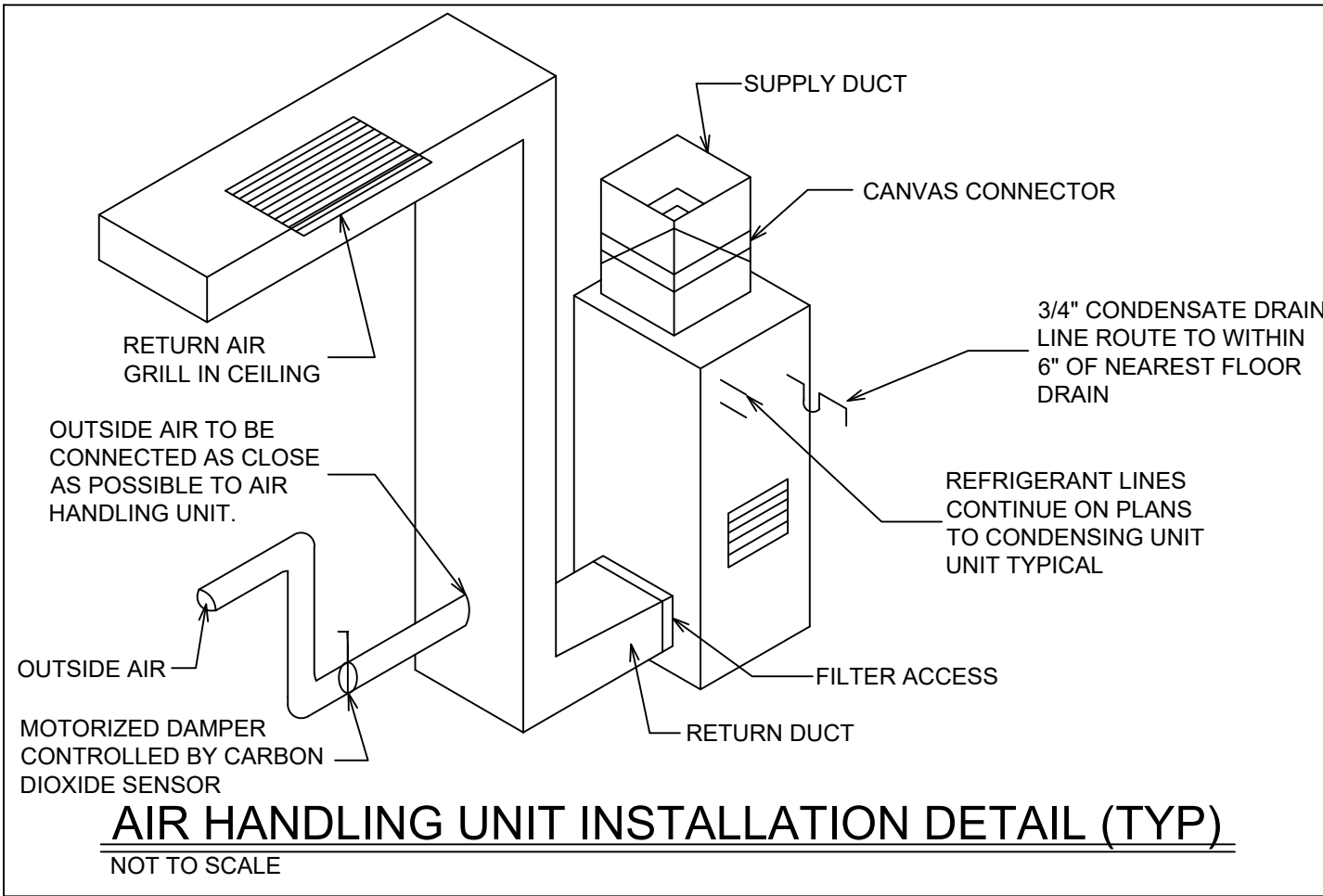
HVAC DESIGN CONDITION			
SUMMER DESIGN TEMP. (DRY BULB/WET BULB)	98/74° F		
WINTER DESIGN (DRY BULB)	3° F		
HVAC LOADS ARE BASED ON THE TINTED, INSULATED, LOW "E" WINDOWS WITH A U-VALUE OF 0.29 OR BETTER AND A SHGC OF 0.32 OR BETTER WITH REASONABLE THERMAL BREAK FRAMES, AND THE OWNER PROVIDING BLINDS/SHADES TO BLOCK SOLAR LOADING.			
OUTSIDE AIR CALCULATIONS ARE BASED ON ASHRAE STANDARD 62.1			

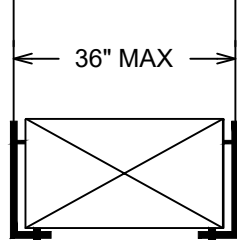

MARK	DESCRIPTION	MANUFACTURER & MODEL	ELECTRICAL			WEIGHT	ACCESSORIES	NOTES
			VOLTS , Ø	MCA	MOCp			
AHU-1	4 TON AIR HANDLING UNIT WITH 12.5kW ELECTRIC HEAT; 1600 CFM @ 0.5" ESP.	YORK: AE48CX21 W/ 6HK(1.2)6501306 ELECTRIC HEAT	240V, 1Ø	55.5.8	70, 20	158 LB.	DISCONNECT BY THE ELECTRICAL CONTRACTOR; 7 DAY PROGRAMMABLE THERMOSTAT. CARBON DIOXIDE SENSOR	O A. = 400- CFM CARBON DIOXIDE SENSOR TO OPEN OUTSIDE AIR DAMPER WHEN LEVEL IS GREATER THEN 700PPM
CU-1	4 TON SPLIT SYSTEM HEAT PUMP - 13 SEER; 7.7 HSPF. 20,200 BUTH HEATING CAPACITY @ 2°F AMBIENT & 70°F INDOOR.	YORK: YHE48B22S	240V, 1Ø	35	50	230 LB.	DISCONNECT BY THE ELECTRICAL CONTRACTOR; CONCRETE PAD	
EF-1	CEILING EXHAUST FAN WITH BACKDRAFT DAMPER AND WHITE PERFORATED GRILLE 106 CFM @ 0.5" ESP; 3.5 SONES	LOREN COOK: GC-144	120V, 1Ø	0.9	20	16 LB.	DISCONNECT BY THE ELECTRICAL CONTRACTOR WALL CAP	

- NOTES:
1. THE MECHANICAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR WIRING REQUIREMENTS OF DUCT MOUNT SMOKE DETECTORS (DSD) IF AND WHEN THEY ARE SPECIFIED OR REQUIRED.
  2. THE MECHANICAL CONTRACTOR IS TO VERIFY EQUIPMENT SHOWN ON SCHEDULE WITH EQUIPMENT SHOWN ON PLAN VIEW (LOCATION, SIZE, QUANTITY).
  3. THE MECHANICAL CONTRACTOR IS TO VERIFY THE ELECTRICAL REQUIREMENTS OF HIS EQUIPMENT (VOLTS, AMPS, WATTS, PHASE) COORDINATE AND CONFIRM WITH THE ELECTRICAL CONTRACTOR SO THAT EQUIPMENT MATCHES ACTUAL JOB UTILITIES.
  4. ALL ROUND TAKEOFFS ARE TO HAVE A BELLMOUTH TYPE FITTING. TAKEOFFS TO INDIVIDUAL SUPPLY DIFFUSERS/GRILLES ARE TO HAVE MANUAL BALANCING DAMPERS IF THEY ARE IN ACCESSIBLE LOCATIONS (E.G., LAY-IN CEILING, EXPOSED, ETC.).

DIFFUSER, GRILLE, AND REGISTER SCHEDULE

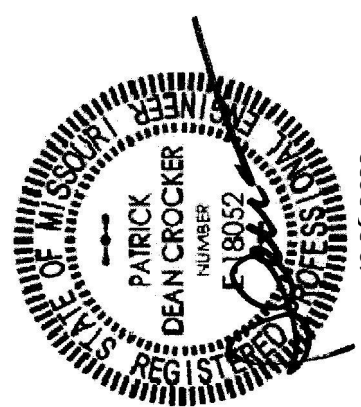
CALLOUT	DESCRIPTION	MODEL	AIRFLOW RANGE (CFM)	NOMINAL SIZE (IN)	INLET SIZE (IN)	NOISE CRITERIA @ MAX CFM	NOTES	QUANTITY
R1	SINGLE DEFLECTED RETURN GRILLE WITH HORIZONTAL BLADES AND SURFACE MOUNTING FRAME	KRUGER: S80H	481 - 1600	24x24	24x24	27		1
S1	DOUBLE DEFLECTED SUPPLY GRILLE WITH HORIZONTAL FRONT BLADES, STEEL OPPOSED BLADE DAMPER AND SURFACE MOUNTING FRAME	KRUEGER: 880H	0 - 100	12x4	12x4	25		2
S3	DOUBLE DEFLECTED SUPPLY GRILLE WITH HORIZONTAL FRONT BLADES, STEEL OPPOSED BLADE DAMPER AND SURFACE MOUNTING FRAME	KRUEGER: 880H	201 - 400	14x8	14x8	25		6



RECTANGULAR DUCTS				NOTE  REINFORCEMENT MUST BE IN COMPLIANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS FOR THE APPROPRIATE PRESSURE CLASS. HANGERS MUST BE IN COMPLIANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS
MAXIMUM SIDE (INCHES)	STEEL (MINIMUM THICKNESS, NOMINAL)	ALUMINUM (MINIMUM THICKNESS, NOMINAL)		
1 THROUGH 12	0.022 INCH (26 GAGE, GALV.)	0.020 INCH (NO. 24 B&S GAGE)		
13 THROUGH 30	0.028 INCH (24 GAGE, GALV.)	0.025 INCH (NO. 22 B&S GAGE)		
31 THROUGH 54	0.034 INCH (22 GAGE, GALV.)	0.032 INCH (NO. 20 B&S GAGE)		
55 THROUGH 84	0.040 INCH (20 GAGE, GALV.)	0.040 INCH (NO. 18 B&S GAGE)		
OVER 84	0.052 INCH (18 GAGE, GALV.)	0.051 INCH (NO. 16 B&S GAGE)		
ROUND DUCTS				HANGER STRAPS FASTEN TO STRUCTURE MAXIMUM 10' CENTERS  
DIAMETER (INCHES)	SPIRAL SEAM DUCT	LONGITUDINAL SEAM DUCT	FITTINGS	
	STEEL (MINIMUM THICKNESS, NOMINAL)	STEEL (MINIMUM THICKNESS, NOMINAL)	ALUMINUM (MINIMUM THICKNESS, NOMINAL)	
1 THROUGH 12	0.019 INCH (28 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)	
13 THROUGH 30	0.022 INCH (26 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)	
31 THROUGH 54	0.028 INCH (24 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)	
55 THROUGH 84	0.034 INCH (22 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)	
OVER 84	0.040 INCH (20 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)	
				HANGER STRAPS FASTEN TO STRUCTURE MAXIMUM 10' CENTERS  



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M2

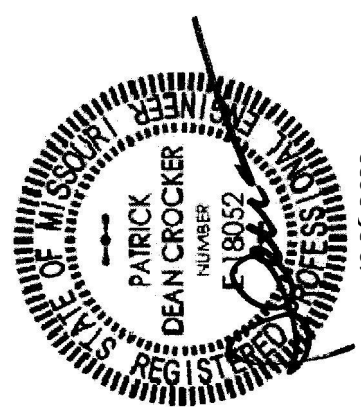


MECHANICAL SPECIFICATIONS		MECHANICAL SPECIFICATIONS		MECHANICAL SPECIFICATIONS		MECHANICAL SPECIFICATIONS		
1	THESE PLANS AND SPECIFICATIONS ARE EACH PART OF AN INTEGRATED DESIGN SYSTEM. ANY MODIFICATION, ALTERATION, CHANGE, DELETION, ADDITION, OR SUBSTITUTION, OF OR TO ANY PART OF THE PLANS OR SPECIFICATION COULD RESULT IN PROPERTY DAMAGE, INJURY, OR EVEN DEATH, AND REQUIRES A FULL REVIEW OF THE ENTIRE SYSTEM BY A PROFESSIONAL ENGINEER. ANY UNAUTHORIZED MODIFICATION OF THIS DOCUMENT MAY CONSTITUTE UNLICENSED PRACTICE AS A PROFESSIONAL ENGINEER AND MAY VIOLATE LAWS REGULATING THE PRACTICE OF ENGINEERING.	15	DUCT INSULATION SHALL BE UL LISTED AND HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A SMOKE DEVELOPED RATING OF 50 IN COMPLIANCE WITH ASTM E84. DUCT LINER MUST BE TREATED TO PREVENT EROSION AND ENTRAINMENT OF FIBERGLASS PARTICLES; DUCT WRAP MUST HAVE ALUMINUM FOIL VAPOR BARRIER OUTER JACKET. MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NON COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84, WHEN THE CAVITY ABOVE A CEILING IS USED AS A COMMON RETURN AIR PLENUM ALL WASTE & VENT PIPING TO BE CAST IRON AND NOT PVC.	39	FLEXIBLE DUCT SHALL BE LISTED AND LABELED AS UL 181 CLASS 1 AIR DUCT WITH POLYESTER CORE PERMANENTLY BONDED TO A COATED SPRING STEEL WIRE HELIX AND INSULATED WITH 1.5" THICK 0.5 LB. DENSITY R-4.20 FIBERGLASS INSULATION WITH REINFORCED METALIZED POLYESTER VAPOR BARRIER.	62	THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED FOR HIS WORK ON THIS PROJECT.	
	2	THIS APPLIES TO ALL MECHANICAL, ELECTRICAL & PLUMBING DRAWINGS; THESE DRAWINGS AND SPECIFICATIONS ARE NOT DETAILED FABRICATION DRAWINGS TYPICALLY SHOWN IN STEP BY STEP INSTRUCTIONS. THEIR INTENT IS TO ESTABLISH THE MINIMUM STANDARD OF PERFORMANCE THAT IS ACCEPTABLE FOR THIS PROJECT. MAJOR COMPONENTS ARE ITEMIZED AND SHOWN BUT, ALL THE WORK AND EACH INDIVIDUAL DEVICE IS NOT NECESSARILY DESCRIBED OR INDICATED IN INTRICATE DETAIL. THE CONTRACTOR IS EXPECTED TO INCLUDE THESE ITEMS IN HIS BID BY HIS FORESIGHT FROM PREVIOUS EXPERIENCE AND/OR WITH A DOLLAR CONTINGENCY AMOUNT FOR UNFORESEEN EXPENSES. THE CONTRACTOR SHOULD BE FAMILIAR WITH THE ARCHITECTURAL, STRUCTURAL, AND CIVIL PLANS ETC. BEFORE MAKING A BID. IF THE CONTRACTOR NEEDS STEP BY STEP INSTRUCTIONS TO COMPLETE THIS WORK OR IF HE IS NOT FAMILIAR WITH THE LOCAL CODES OR THE TYPE OF SYSTEMS BEING INSTALLED, HE IS ADVISED NOT TO SUBMIT A BID OR TO WORK ON THIS PROJECT. FIELD MEASURING AND COORDINATING WITH OTHER TRADES IS MANDATORY. ALTHOUGH THE DRAWINGS SHOULD BE SIMILAR TO THE ACTUAL DIMENSIONS, THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE DIMENSIONS OF THE WORK SHOWN. DO NOT SCALE DIMENSIONS OFF THE PLANS FOR FABRICATION. VERIFY WITH FIELD MEASUREMENT. COORDINATE WITH GENERAL CONTRACTOR EACH EQUIPMENT SIZE WITH THE LOCATION WHERE IT IS TO BE INSTALLED BEFORE ORDERING. NOTIFY THE ENGINEER IF SPACE DOES NOT ALLOW FOR EQUIPMENT SPECIFIED. ALL SUCH DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AND IT IS HIS RESPONSIBILITY TO FIT WORK INTO ALL OPEN SPACE. ALL OFF-SETS AND APPLICABLE CHANGES IN ROUTING ARE CONSIDERED A PART OF THE SCOPE OF THE BASE BID FOR THIS PROJECT AND SHALL BE APPROVED BY THE ENGINEER OR ARCHITECT BEFORE INSTALLATION.	16	DUCTING TO BE SUPPORTED WITH 1/4" ALL THREAD AND UNISTRUT. AT 10' CENTERS MAXIMUM. (OR OTHER APPROVED METHOD BY ENGINEER.	40	E.C. TO PROVIDE CONDUIT FOR ALL POWER TO HVAC EQUIPMENT. E.C. TO PROVIDE CONDUIT FOR THERMOSTAT LOCATION (BOX AND 3/4" CONDUIT STUBBING UP ABOVE CEILING). M.C. TO PROVIDE THERMOSTATS AND TO WIRE THERMOSTATS AND HVAC CONTROLS. IT IS THIS CONTRACTORS RESPONSIBILITY TO SEE THAT FINAL SEQUENCE OF OPERATION IS AS REQUIRED.	63	MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. WHEN THE CAVITY ABOVE A CEILING IS USED AS A COMMON RETURN AIR PLENUM ALL WASTE & VENT PIPING TO BE CAST IRON AND NOT PVC. MC TO ADVISE OTHER CONTRACTORS WHEN CAVITY SPACE ABOVE CEILING IS A COMMON RETURN AND NOT DUCTED.
		17	COORDINATE DUCTING WITH ROOF SUPPORT STRUCTURE.	41	THE M.C. IS RESPONSIBLE FOR REMOVING ALL MAINTENANCE AND INSTALLATION MANUALS AND INSTRUCTIONS FROM COMPONENTS THAT HE IS INSTALLING AND GIVING SUCH DATA TO THE OWNER AND/OR TENANT. PROVIDE 3 COPIES TO OWNERS IN A BOUND MANUAL. ALL AIR SUPPLY, RETURN AND EXHAUST SYSTEMS SHALL BE BALANCED AND ADJUSTED TO MEET CAPACITY AND CONDITION SHOWN IN CONSTRUCTION DOCUMENTS. THIS WORK SHALL BE PERFORMED BY HVAC CONTRACTOR. CONTRACTOR TO CHECK OPERATION OF ALL SYSTEMS AND BALANCE DIFFUSER AIR FLOWS TO WITHIN PLUS OR MINUS 10%. SUBMIT A BALANCE REPORT FOR APPROVAL. RE-BALANCE MAY BE REQUIRED BY TENANT. WHEN ALL HVAC SYSTEMS ARE IN OPERATIONS, THE BUILDING SHALL HAVE A POSITIVE PRESSURE OF +0.05" WC WITH RESPECT TO THE OUTDOORS. THE BUILDING SHALL NEVER BE BALANCED TO HAVE A NEGATIVE PRESSURE UNLESS SPECIFICALLY STATED OTHERWISE ON THE DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE TESTING AND BALANCING TO BALANCE THE SYSTEMS TO ACHIEVE THIS PRESSURE.	64	APPLICABLE CODES IMC 2018 IPC 2018 IFGC 2018 NEC 2017	
18		DUCTWORK SHALL BE INTERNALLY LINED (EXCEPT AS OTHERWISE NOTED IN THESE SPECIFICATIONS AND/OR ON THE DRAWINGS) AND INSTALLED PER THE LATEST SMACNA, ASHRAE, CURRENT INTERNATIONAL MECHANICAL CODE AND ADOPTIVE LOCAL ORDINANCES. SUPPLY AND RETURN AIR DUCTS SHALL BE GALVANIZED STEEL. LOW VELOCITY DUCT CONSTRUCTION STANDARDS. ALL SUPPLY AIR DUCT PRESSURE CLASSES SHALL BE THE SAME AS THE EXTERNAL STATIC PRESSURE (ESP) OF THE EQUIPMENT SUPPLYING THE DUCT. THE EQUIPMENT ESP SHALL BE THE PRESSURE CLASS FOR THE ENTIRE SUPPLY DUCT SYSTEM.	42	THE CONTRACTOR SHALL GUARANTEE ALL SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE.	65	RETURN DUCTS SHALL HAVE A MINIMUM OF TWO (2) 90° TURNS BETWEEN THE RETURN GRILLE(S) AND THE UNIT TO REDUCE NOISE TRANSMISSION FROM THE UNIT INTO THE OCCUPIED SPACE.		
3	THE ENGINEER IS NOT RESPONSIBLE FOR FIELD ACTIVITIES ON THIS PROJECT WITHOUT DIRECT INSPECTION OF WORK IN PROGRESS. FIELD INSPECTIONS ARE TO BE COORDINATED BY ARCHITECT. IT IS NEITHER EXPRESSED NOR IMPLIED THAT THE CONTRACTOR CAN CONSTRUCT THIS PROJECT WITHOUT THE ARCHITECT'S FIELD INSPECTIONS. IF FIELD CONDITIONS ARE UNCOVERED THAT REQUIRE A CHANGE OR ADDITIONAL INFORMATION THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY. THE ARCHITECT WILL THEN NOTIFY THE ENGINEER. THE ARCHITECT DOES NOT DELEGATE HIS AUTHORITY TO ANYONE ELSE FOR DETERMINING THE MEANING OF HIS PLANS OR SPECIFICATIONS.	19	ADHERE TO OSHA REGULATIONS AND TO MECHANICAL INDUSTRY SAFETY PRACTICES.	43	CHECK REFLECTED CEILING PLAN FOR CORRECT PLACEMENT OF REGISTERS AND GRILLES.	66	M.C. TO PROVIDE PVC WALL SLEEVES TO PROTECT LINE SETS RUNNING BETWEEN INDOOR AND OUTDOOR UNITS.	
	4	SPECIFICATION REQUIREMENTS ARE THAT THE DIFFERENT TRADES ARE TO COORDINATE WITH EACH OTHER. THE MECHANICAL CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE PLUMBING AND ELECTRICAL SHEETS. THE PLUMBING CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE MECHANICAL AND ELECTRICAL SHEETS. THE ELECTRICAL CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE PLUMBING AND MECHANICAL SHEETS. COORDINATE DOES NOT MEAN "I WAS HERE FIRST".	20	CONDENSATE DRAINS TO BE 3/4" PVC TRAPPED AT THE UNIT AND ROUTED TO THE NEAREST DRAIN UNLESS OTHERWISE SHOWN ON THE DRAWINGS. DO NOT DRAIN DIRECTLY ONTO ROOF FROM RTU UNITS. UNITS MOUNTED ABOVE CEILING MUST HAVE SECONDARY DRAIN PAN INSTALLED COMPLETELY UNDER THE HVAC UNIT. THIS DRAIN PAN TO BE TRAPPED AND ROUTED TO THE NEAREST DRAIN. DRAIN & DRAIN LINE TO BE INSULATED IF ABOVE A FINISHED CEILING.	44	FILTER MEDIA TO BE FRAMED, DISPOSABLE TYPE (MERV 8 1" THICK PLEATED). MAINTAIN FILTERS AND EQUIPMENT FOR CONSTRUCTION USE. UPON APPROVAL OF THE OWNERS AND PROJECT ENGINEER, ALL MAINTENANCE REQUIRED SHALL BE BY THE GENERAL CONTRACTOR UNTIL THE OWNER/TENANT TAKES POSSESSION OF THE BUILDING. AFTER THIS TIME THE OWNER WILL BE RESPONSIBLE TO FOLLOW THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS FOR PERIODIC REPLACEMENT OF THE FILTERS.	67	NO CONDUIT, PIPING, DUCTS, EQUIPMENT, ETC., SHALL BE ROUTED THROUGH OR ABOVE THE ELEVATOR EQUIPMENT ROOM EXCEPT WHAT IS NECESSARY FOR THE OPERATION OF THE ELEVATOR EQUIPMENT.
		21	ALL HVAC UNITS TO BE PROVIDED WITH ELECTRICAL DISCONNECTS BY ELECTRICAL CONTRACTOR.	45	ALL EXPOSED DUCTING TO BE PAINTED BY PAINTING CONTRACTOR. (COLOR TO BE SELECTED BY OWNER AND/OR ARCHITECT.)	68	ALL PENETRATIONS THROUGH THE ROOF, THE FLOOR, OR EXTERIOR WALLS SHALL BE SEALED, CAULKED, GASKETED, OR WEATHER-STRIPPED TO MINIMIZE AIR LEAKAGE.	
5		CONTRACTOR IS TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH ALL ON-SITE CONDITIONS, VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING CONDITIONS, AND MAKE CONNECTIONS TO LOCAL UTILITY COMPANY REQUIREMENTS AND IN ACCORDANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS. THE CONTRACTOR IS TO CONTACT THE LOCAL UTILITY COMPANY(S) & TO CONFIRM THE SCOPE OF RESPONSIBILITY FOR ALL UTILITY CONNECTION. CONTRACTORS ARE ALSO TO INSPECT ANY AND ALL EQUIPMENT AT THE SITE, TO INSPECT ANY AND ALL EQUIPMENT THAT IS BEING PURCHASED AND/OR MOVED FROM ANOTHER LOCATION OR SITE TO THE NEW SITE, TO CHECK ANY AND ALL NAMEPLATES AND TO VERIFY UTILITY REQUIREMENTS, THEN TO VERIFY, CONFIRM AND COORDINATE WITH THE DRAWINGS. DISCREPANCIES ARE TO BE COORDINATED WITH THE ENGINEER. CONTRACTOR INSPECTIONS AND VERIFICATIONS ARE TO BE PRIOR TO PREPARING THE NEW SITE.	22	ALL DUCTWORK SHALL HAVE CANVAS CONNECTORS BETWEEN DUCTWORK AND FURNACES ON BOTH SUPPLY AND RETURN AIR CONNECTIONS, AND WRAPPED WITH FSK DUCT WRAP IF NOT IN CONDITIONED SPACE.	46	ALL UNITS ARE TO BE LABELED IN ACCORDANCE WITH THE AREA THAT THEY ARE SERVICING.	69	ANY MECHANICAL EQUIPMENT INSTALLED IN AN AREA WHERE CONDENSATE FREEZING IS LIKELY SHALL BE PROVIDED WITH FREEZE PROTECTION. UL LISTED SELF REGULATED OR THERMOSTATICALLY CONTROLLED HEAT TAPE RATED AT 5-6 WATTS PER FOOT AT 120VOLTS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.
	6	IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR CONNECTION AND TO COORDINATE ALL UTILITY SERVICES TO THE FACILITIES/BUILDING. THE CONTRACTOR IS TO INCLUDE ALL COSTS, FEES, CHARGES, ETC. ASSOCIATED WITH THE CONNECTION OF NEW SERVICES (OR IN THE EVENT OF RENOVATIONS TO AN EXISTING BUILDING, MODIFICATIONS TO EXISTING SERVICES) FOR THE BUILDING. ALL WORK IS TO BE DONE IN ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES. THE UTILITY COMPANY(S) STANDARDS, THE CURRENT INTERNATIONAL BUILDING CODE AND THE CURRENT INTERNATIONAL CODE COORDINATE ALL ROUGH-INS WITH THE OWNER.	23	DUCT SHALL BE CONSTRUCTED OF GALVANIZED STEEL IN MINIMUM GAUGES AS SCHEDULED. PROVIDE SINGLE BLADE TURNING VANES WITH 3/4" STRAIGHT TRAILING EDGE IN ALL FITTINGS GREATER THAN 45". ROUND DUCT BRANCH TAKEOFFS SHALL BE MADE WITH LOW PRESSURE FITTINGS WITH DAMPERS UNLESS ABOVE PERMANENT (INACCESSIBLE) CEILING. UTILIZE THE LOW PRESSURE TAKE-OFF INSTEAD ON LOW PRESSURE DUCT WORK. CONICAL (BELMOUTH OR EQUAL) TO BE UTILIZED ON ALL MEDIUM OR GREATER PRESSURE CLASSES OF DUCTWORK.	47	MECHANICAL CONTRACTOR TO PROVIDE FIRE DAMPERS FOR ANY PENETRATIONS THRU FIRE RATED ASSEMBLIES. FIRE DAMPERS SHALL BE UL LISTED AND SHALL BE OF A DESIGN TO PROVIDE 100% FREE AREA OF THE DUCT IN WHICH THEY ARE INSTALLED. UL LISTED ACCESS DOORS SHALL BE PROVIDED FOR EACH FIRE DAMPER. INSTALL FIRE DAMPERS AT EACH PENETRATION OF FIRE RATED CONSTRUCTION. REFER TO ARCHITECTURAL PLANS FOR LISTING.		
		24	ALL AIR HANDLERS DELIVERING OVER 2000 CFM TO HAVE DUCT MOUNTED SMOKE DETECTOR IN THE MAIN RETURN AIR TRUNK LINE. DETECTORS TO HAVE BOTH VISUAL & AUDIBLE ALARM REMOTE MOUNTED IN AN ACCESSIBLE AREA. DETECTOR TO SHUT DOWN AIR HANDLING UNIT AS WELL AS HAVE ALARM FUNCTION.	48	ALL PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE FIRESTOPPED. INTUMESCENT CAULK WITH COLLAR SHALL BE USED ON ALL PENETRATIONS WITH PVC OR OTHER NONMETALLIC PIPE. USE FIRE CAULK THAT IS LISTED FOR THE SPECIFIC ASSEMBLY BEING PENETRATED AND FOR THE SIZE AND TYPE OF MATERIAL THAT PENETRATES THE ASSEMBLY.			
7		THE PLANS ARE DIAGRAMMATIC AND NOT TO BE SCALED. REFER TO ARCHITECTURAL DRAWINGS AND FIELD MEASUREMENTS FOR FINAL DIMENSIONS. THE CONTRACTOR SHALL FABRICATE AND INSTALL DUCT WORK TO AVOID JOISTS, BEAMS, TRUSSES, LIGHTS, ETC. COORDINATE WORK WITH ALL OTHER TRADES.	25	ALL OUTSIDE AIR INTAKE DUCTS TO HAVE LOCKING QUADRANT DAMPER AT THE CONNECTION TO THE RETURN AIR.	49	CONTRACTOR IS TO SUPPLY SUBMITTALS WHICH SHALL INCLUDE (2) SETS OF SHOP DRAWINGS AND ANY ADDITIONAL INFORMATION REQUIRED FOR INSTALLATION, ADJUSTMENT, OPERATIONS AND MAINTENANCE OF MANUFACTURERS DATA ON ALL EQUIPMENT, CONTROLS, GRILLES, REGISTERS, DIFFUSERS AND LOUVERS, INCLUDING PICTORIAL CATALOG CUTSHEETS WHICH ARE CALLED FOR IN SPECIFICATIONS. IDENTIFY EACH SUBMITTAL BY SPECIFICATION, DIVISION, NUMBER OR BY DESIGNATION ON THE DRAWINGS IN A LETTER OF TRANSMITTAL. THE SHOP DRAWING WILL BE REVIEWED, MARKED UP AND THEN SCANNED IN, AND E-MAILED TO THE SHOP DRAWING DISTRIBUTION LIST, WHICH THEY THEN CAN PRINT AS MANY COPIES AS THEY WISH. SHOP DRAWING DISTRIBUTION: ARCHITECT, OWNERS REPRESENTATIVE, GENERAL CONTRACTOR. ALL SHOP DRAWINGS MUST BE NO LARGER THEN 11"x17" SIZE PER SHEET SUBMITTALS MUST BE COMPLETE. ALL ITEMS MUST BE SUBMITTED SIMULTANEOUSLY, AND RATINGS MUST BE AT THE CONDITIONS OF SERVICE SPECIFIED. (SUBMITTALS SHOULD BE SUBMITTED PRIOR TO ORDERING ANY EQUIPMENT.) PURCHASE NO MATERIAL OR EQUIPMENT UNTIL SUBMITTALS HAVE BEEN APPROVED.		
	8	THESE DRAWINGS REPRESENT THE APPROXIMATE LOCATION OF THE DUCTWORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL ROUTING OF THE DUCTWORK. THIS RESPONSIBILITY INCLUDES AVOIDING INTERFERENCE'S WITH THE BUILDING STRUCTURE, PIPING SYSTEMS AND ELECTRICAL WORK.	26	CONTRACTOR SHALL PROVIDE ALL REFRIGERANT LINES. SIZING AND INSTALLATION OF REFRIGERANT LINES SHALL BE AS RECOMMENDED BY E/M. ALL REFRIGERANT LINES SHALL EITHER BE TYPE ACR COPPER OR PRE-CHARGED LINES. PRE-CHARGED LINES SHALL BE SUPPLIED BY REFRIGERATION EQUIPMENT MANUFACTURER. ALL REFRIGERANT LINES SHALL BE TESTED. CONTRACTOR SHALL EVACUATE PIPING SYSTEM WITH A VACUUM PUMP. CHARGE WITH REFRIGERANT TO A PRESSURE OF 10 PSIG, AND THEN ADMIT DRY NITROGEN UNTIL THE PRESSURE IS 150 PSIG. FINAL PRESSURE SHALL BE LEFT ON SYSTEM FOR A MINIMUM OF FOUR (4) HOURS. AFTER SYSTEM IS FOUND TO BE LEAK FREE, DOUBLE EVACUATE SYSTEM TO 250 MICRONS. PRE-CHARGED LINES NEED NOT BE TESTED EXCEPT WHERE LEAKS ARE SUSPECTED.	50	MECHANICAL CONTRACTOR TO COORDINATE FINAL MECHANICAL EQUIPMENT SELECTED (ELECTRICAL REQUIREMENTS) WITH ELECTRICAL CONTRACTOR AND WITH THE ELECTRICAL DRAWINGS PRIOR TO ORDERING HIS MECHANICAL EQUIPMENT AND PRIOR TO THE ELECTRICIAN PERFORMING THE ELECTRICAL WORK.		
		9	THE MECHANICAL CONTRACTOR IS TO BID THE PROJECT AND PERFORM THE WORK FOR A COMPLETE OPERATING SYSTEM. THE HVAC CONTRACTOR SHALL INSPECT THE JOB SITE AND REVIEW THE PLANS FOR DEVIATIONS, ERRORS AND OMISSIONS AND SHALL BRING THEM TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION OR CORRECTION PRIOR TO BIDDING. REQUESTS FOR ADDITIONAL FUNDS FOR EXTRA WORK WILL NOT BE HONORED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER. THEREFORE, IT SHALL BE UNDERSTOOD THAT ALL THE ITEMS SHALL BE INCLUDED FOR AN OPERATING SYSTEM WHETHER ALL SPECIFIC FITTINGS AND ACCESSORIES ARE SPECIFIED IN SPECIFICATIONS OR NOT. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF THE MEASUREMENTS AS SHOWN ON THE DRAWINGS AND ALL OTHER MEASUREMENTS PERTINENT TO ALL HVAC UNITS TO BE PROVIDED WITH THE WORK COVERED BY THIS SPECIFICATION. PROVIDE ALL HARDWARE AND ACCESSORIES NECESSARY FOR A COMPLETE MECHANICAL INSTALLATION. CHANGES OR DEVIATION FROM CONTRACT MUST BE SUBMITTED IN WRITING FOR REVIEW BY THE A/E. NO VERBAL ORDERS WILL BE RECOGNIZED. ALL CHANGE PROPOSALS SHALL BE ITEMIZED INDICATING SEPARATELY THE COSTS FOR MATERIALS, LABOR, RESTOCKING CHANGES, FREIGHT, BONDS, INSURANCE, OVERHEAD AND PROFIT. ALL MATERIALS SHALL BE LISTED SEPARATELY WITH QUANTITIES AND INDIVIDUAL UNIT PRICES. LABOR FACTORS SHALL BE FROM A NATIONALLY RECOGNIZED SOURCE WITH APPROPRIATE ADJUSTMENT FACTORS.	27	ALL REFRIGERANT PIPING TO BE HARD DRAWN ACR COPPER TUBING. TYPE "L" ABOVE GRADE AND TYPE "K" BELOW GRADE. WROUGHT COPPER FITTINGS. JOINTS SHALL BE MADE WITH 15% SILVER BEARING SOLDER. PIPING SHALL BE PURGED DURING SOLDERING WITH DRY NITROGEN AND SHALL BE KEPT SEALED TO PREVENT THE ENTRANCE OF MOISTURE. INSTALL PIPING CONCEALED WHERE POSSIBLE AND PARALLEL AND PERPENDICULAR TO THE LINES OF THE BUILDING. SUPPORT WITH MANUFACTURED HANGERS AT MAXIMUM 10' CENTERS AND AT EACH VERTICAL SECTION. COORDINATE SIZING OF PIPING WITH MANF. RECOMMENDATIONS.	51	CONTRACTOR IS TO FOLLOW ALL MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION OF EQUIPMENT. AIR HANDLING UNITS SHALL NOT BE USED FOR TEMPORARY HEAT OR AIR CONDITIONING FOR THE CONSTRUCTION SITE UNLESS THE MANUFACTURER'S INSTALLATION MANUAL SPECIFICALLY ALLOWS. ELECTRICALLY OPERATED EQUIPMENT SHALL BE UL LISTED, GAS FIRED EQUIPMENT SHALL BE AGA APPROVED. ALL EQUIPMENT SHALL BE INSTALLED IN COMPLIANCE WITH THE MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.	
10			CONTRACTOR SHALL SCHEDULE AND EXECUTE ALL WORK WITH REGARD TO THE OWNERS USE OF THE BUILDING, BOTH EXISTING AND NEW.	28	INSULATE SUCTION LINES WITH 1/2" WALL THICKNESS CLOSED CELLULAR INSULATION. SEAL ALL JOINTS WITH ADHESIVE. INSULATION SHALL BEAR THE UL CLASSIFICATION WITH A MAXIMUM FLAME SPREAD RATING OF 25 AND A SMOKE DEVELOPED RATING OF 50 IN COMPLIANCE WITH ASTM E84.	52	CONTRACTOR(S) TO HAVE AT LEAST 5 YEARS OF EXPERIENCE WITH SYSTEMS OR SIMILAR SYSTEMS AS SHOWN ON PLANS AND SPECIFICATIONS. (PROVIDE LIST OF CUSTOMERS ACCORDINGLY.)	
	11		CHANGES OR DEVIATION FROM CONTRACT MUST BE SUBMITTED IN WRITING FOR REVIEW BY THE A/E. NO VERBAL ORDERS WILL BE RECOGNIZED. ALL CHANGE PROPOSALS SHALL BE ITEMIZED INDICATING SEPARATELY THE COSTS FOR MATERIALS, LABOR, RESTOCKING CHANGES, FREIGHT, BONDS, INSURANCE, OVERHEAD AND PROFIT. ALL MATERIALS SHALL BE LISTED SEPARATELY WITH QUANTITIES AND INDIVIDUAL UNIT PRICES. LABOR FACTORS SHALL BE FROM A NATIONALLY RECOGNIZED SOURCE WITH APPROPRIATE ADJUSTMENT FACTORS.	29	REFRIGERANT PIPING SHALL BE TYPE L ACR COPPER PRE-CHARGED LINE SETS FURNISHED BY THE CONDENSING UNIT MANUFACTURER. ALL FIELD JOINTS REQUIRED SHALL BE SOLDERED WITH SILFOS (15% SILVER, 5% PHOSPHORUS, 80% COPPER, 1300°F FLOW TEMPERATURE). ALL SOLDERED JOINTS SHALL BE MADE WITH A PURGE STREAM OF DRY NITROGEN PASSING THROUGH THE PIPING.	53	M.C. IS TO PURCHASE A PRE-MANUFACTURED ROOF CURB AND VENTILATOR AS SPECIFIED TO ADAPT TO EXISTING ROOF AND MAKE SURE ROOF WARRANTY REMAINS INTACT. M.C. TO COORDINATE WITH BUILDING OWNER AND/OR GENERAL CONTRACTOR AS TO TYPE OF ROOF AND MANUFACTURER OF ROOF. VERIFY IF GENERAL CONTRACTOR/ROOF SUPPLIER TO FURNISH AND INSTALL THE ROOF CURBS SO AS NOT TO JEOPARDIZE THE ROOF WARRANTY. M.C. IS TO COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE THAT ALL ROOF PENETRATIONS ARE MADE BEFORE THE ROOFING CONTRACTOR BEGINNING HIS WORK.	
		12	RECTANGULAR DUCT - 1" PRESSURE CLASS OR LESS: GALVANIZED SHEET METAL WITH 1/2" THICK, 2 LB. DENSITY DUCT LINER OR 1.5" THICK, 3/4 LB DENSITY FIBERGLASS DUCT WRAP WITH FOIL-SCRIM-KRAFT FACING. ROUND DUCT - 1" PRESSURE CLASS OR LESS: GALVANIZED SNAP LOCK PIPE. WRAP WITH 1.5", 3/4 LB DENSITY FIBERGLASS DUCT WRAP WITH FOIL-SCRIM-KRAFT FACING. SUPPLY AND RETURN DUCTS INSTALL ON THE BUILDING EXTERIOR SHALL HAVE MIN. R-8 INSULATION.	30	IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE ALL (ANY WORK ASSOCIATED WITH THE MECHANICAL EQUIPMENT).	54	LOW PRESSURE DUCTWORK SHALL BE SIZED AT A PRESSURE DROP OF 0.08" W.C. PER 100 FT. SUPPLY, RETURN, AND EXHAUST, DUCTING TO BE INSTALLED AS SHOWN ON THE DRAWINGS. M.C. MAY CHANGE FROM RECTANGULAR AND/OR SQUARE DUCTING TO ROUND DUCTING AS LONG AS THE SUBSTITUTION HAS EQUIVALENT PRESSURE DROP FOR ITS CROSS SECTIONAL AREA TO OBTAIN THE SAME SPECIFIED AIR FLOW. TYPICALLY AS A GENERAL RULE-OF-THUMB, AS LONG AS THE CROSS SECTIONAL AREA IS THE SAME, THEN A SUBSTITUTION CAN BE MADE	
13			RECTANGULAR EXHAUST DUCT: GALVANIZED SHEET METAL. WRAP WITH 1.5" THICK, 3/4 LB DENSITY FIBERGLASS DUCT WRAP WITH FOIL-SCRIM-KRAFT FACING. ROUND EXHAUST DUCT: GALVANIZED SNAP-LOCK PIPE WITH TRANSVERSE JOINTS TAPED. WRAP WITH 1.5" THICK, 3/4 LB DENSITY FIBERGLASS DUCT WRAP WITH FOIL-SCRIM-KRAFT FACING. FLEXIBLE DUCT IS NOT PERMITTED FOR EXHAUST DUCTS. DO NOT LINE OR INSULATE EXHAUST DUCT INTERIOR UNLESS NOTED OTHERWISE ON DRAWINGS.	31	THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER CONTRACTORS AND TRADES INVOLVED, IN ORDER TO PREVENT CONFLICTS CAUSING UNNECESSARY EXPENSE OR DELAYS IN THE INSTALLATION OF WORK UNDER OTHER CONTRACTORS.	55	DUCT ROOF PENETRATIONS SHALL BE THROUGH INSULATED CURBS. PIPE ROOF PENETRATIONS SHALL BE THROUGH DECTITE OR ROOF CURBS. DECTITE TYPE FLASHINGS SHALL BE UTILIZED ON PIPING THRU ROOFS WHERE POSSIBLE. FIRE RATED PENETRATIONS TO BE PROTECTED WITH UL LISTED THROUGH PENETRATION SYSTEMS SUITABLE FOR THE CONSTRUCTION PENETRATED.	
	14		BRANCH DUCTS SHALL BE THE SAME SIZE AS DIFFUSER NECK UNLESS NOTED OTHERWISE.	32	THIS CONTRACTOR SHALL FURNISH A SET OF "AS BUILT" DRAWINGS TO THE GENERAL CONTRACTOR UPON COMPLETION OF THIS WORK. DRAWINGS MAY BE NEATLY MARKED MECH. PLANS. MAINTAIN A REPRODUCIBLE SET OF CONTRACT DRAWINGS AND SHOP DRAWINGS IN CLEAN, UNDAMAGED CONDITION, WITH MARKUP OF ACTUAL INSTALLATIONS WHICH VARY SUBSTANTIALLY FROM THE WORK AS ORIGINALLY SHOWN. MARK COVER SHEETS, AND PRINT SUITABLE TITLES, DATE AND OTHER IDENTIFICATION ON COVER OF EACH SHEET.	56	EQUIVALENT MANUFACTURERS OF GRILLES, REGISTERS AND DIFFUSERS SHALL BE CARNES, TITUS, KRUEGER OR ANEMOSTAT.	
		33	ALL DUCTWORK SHALL BE NEAT, ACCURATE, MECHANICALLY TIGHT AND RIGIDLY CONSTRUCTED. ALL UNINSULATED PANELS WIDER THAN 12 INCHES SHALL BE CROSS BROKEN. TURNING VANES SHALL BE SUPPLIED AT ALL ABRUPT CHANGES IN DUCTWORK. DUCT WORK SHALL BE CONSTRUCTED AND INSTALLED IN COMPLIANCE WITH SMACNA STANDARDS FOR HVAC DUCT CONSTRUCTION. DUCT SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO THE LINES OF THE BUILDING. FIRE RATED PENETRATIONS WILL BE PROTECTED WITH UL LISTED THROUGH-PENETRATION SYSTEMS SUITABLE FOR CONSTRUCTION PENETRATED.	57	EQUIVALENT MANUFACTURERS OF FURNACE, EVAPORATOR, AND CONDENSING UNITS SHALL BE LENNOX, YORK, CARRIER, OR TRANE. CONDENSING UNITS, EVAPORATOR COILS, AND FURNACES SHALL BE BY THE SAME MANUFACTURER.			
34		THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL LOCATION OF THE EQUIPMENT BASED ON THEIR APPROXIMATE LOCATIONS AS INDICATED ON THE DRAWINGS. THIS RESPONSIBILITY INCLUDES AVOIDING INTERFERENCE'S WITH THE BUILDING STRUCTURE, PIPING SYSTEMS AND ELECTRICAL WORK.	58	EQUIVALENT MANUFACTURERS OF EXHAUST FANS SHALL BE CARNES, LOREN COOK, PENN VENTILATOR, JENN INDUSTRIES, ACME OR GREENHECK				
		35	THE HVAC CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIAL AND EQUIPMENT FOR A COMPLETE JOB IN ACCORDANCE WITH THE PLANS AND ALL APPLICABLE LOCAL BUILDING CODES. SECURE AND PAY FOR ALL FEES, PERMITS, LICENSES AND INSPECTIONS NECESSARY.	59	ALL ITEMS EXPOSED TO THE EXTERIOR ARE TO BE "PAINTED TO MATCH ADJACENT MATERIALS." IT IS THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE THIS IN HIS COSTING AND TO BE RESPONSIBLE FOR THIS.			
		36	THE CONTRACTOR SHALL SUPPLY THE AIR HANDLING AND CONDENSING UNIT SPECIFIED ON THE PLAN, FABRICATE ALL DUCTS AND FITTINGS AND INSTALL A NEW, COMPLETE AIR CONDITIONING SYSTEM AS SHOWN ON THE PLAN. DUCT DIMENSIONS SHOWN ARE NET INSIDE DIMENSIONS. ALL METAL DUCTWORK SPECIFIED TO RECEIVE INTERIOR THERMAL AND ACOUSTICAL LINER IS NOT SIZED ON PLANS TO INCLUDE THE PROPER THICKNESS OF INSULATION. ADD HEIGHT AND WIDTH OF INSULATION TO ACCOMMODATE THICKNESS OF INSULATION.	60	THERMOSTATS TO BE SUPPLIED WITH ALL UNITS. CORRIDOR AND STAIRCASE T-STATS TO BE INSTALLED IN LOCK BOXES WITH CLEAR COVERS. THERMOSTATS TO BE 7 DAY PROGRAMMABLE			
		37	DUCTWORK DIMENSIONS NEAR EQUIPMENT ARE APPROXIMATE. THE CONTRACTOR MUST FABRICATE THE DUCTWORK TO FIT THE EQUIPMENT SUPPLIED.	61	DUCTWORK SHALL BE INSTALLED PER THE LATEST SMACNA AND ASHRAE STANDARDS USING MECHANICAL FASTENERS WITH GASKETS, SEALS, ETC. ALL LONGITUDINAL AND TRANSVERSE DUCT SEAMS INCLUDING CONNECTIONS TO MECHANICAL EQUIPMENT SHALL BE SEALED WITH UL 181A OR 181B TAPES AND MASTICS.			
		38	ROUND PRE-INSULATED FLEXIBLE DUCT MAY BE UTILIZED TO DROP FROM THE MAIN DUCT TO THE DIFFUSERS IN RUNS NO LONGER THAN 6'. INSTALLATION MUST COMPLY WITH BOCA M305.1, UL181, CLASS 0 OR 1. FLEXIBLE DUCT SHALL NOT BE USED ON SYSTEMS WITH PRESSURE CLASS GREATER THAN 1".					



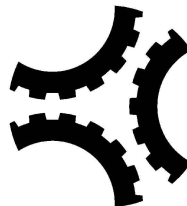
New Training Building  
Nixa Police Department Shooting Range  
Nixa, Christian County, MO 65741

City of Nixa, Missouri  
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Date: October 26, 2022

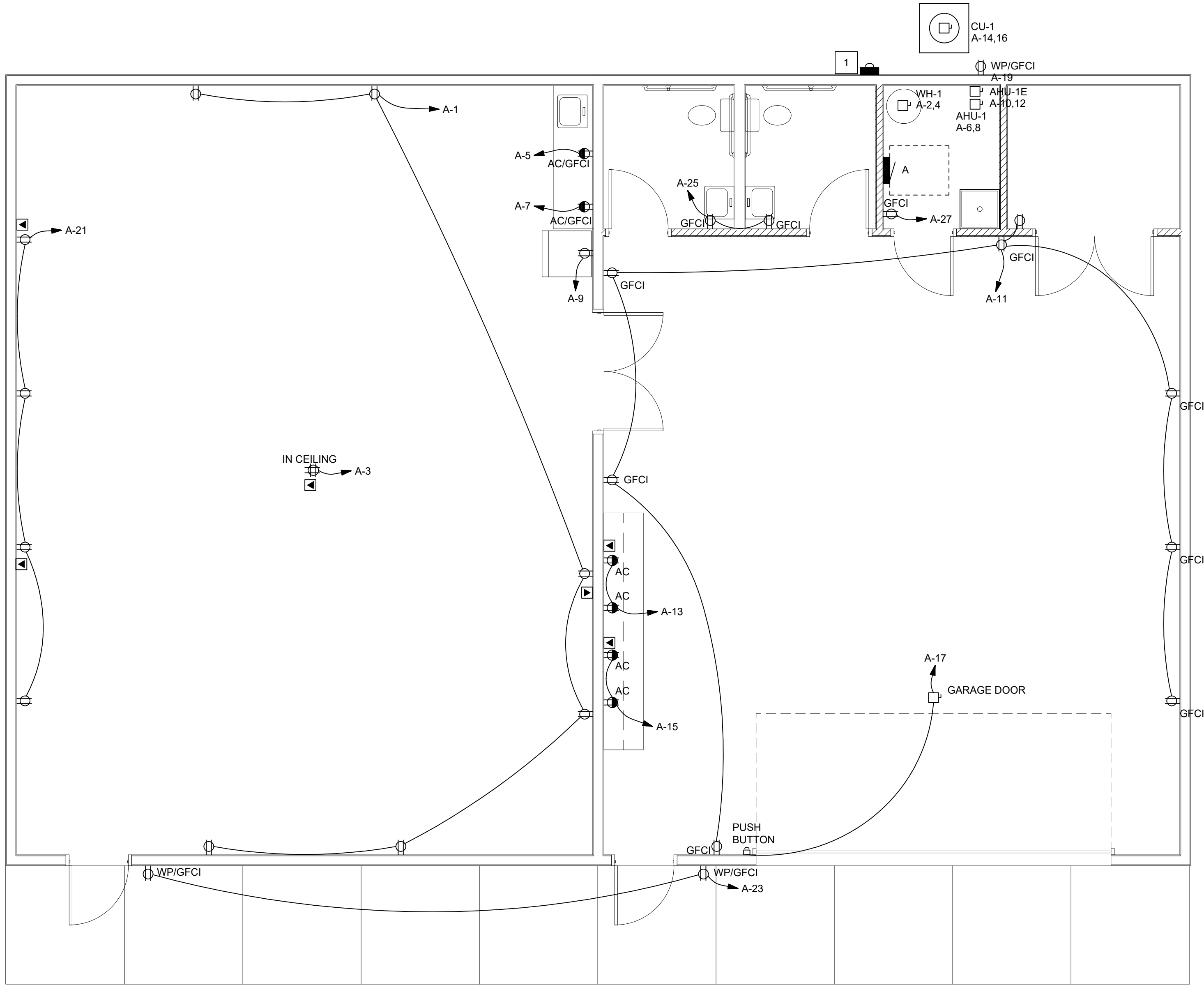


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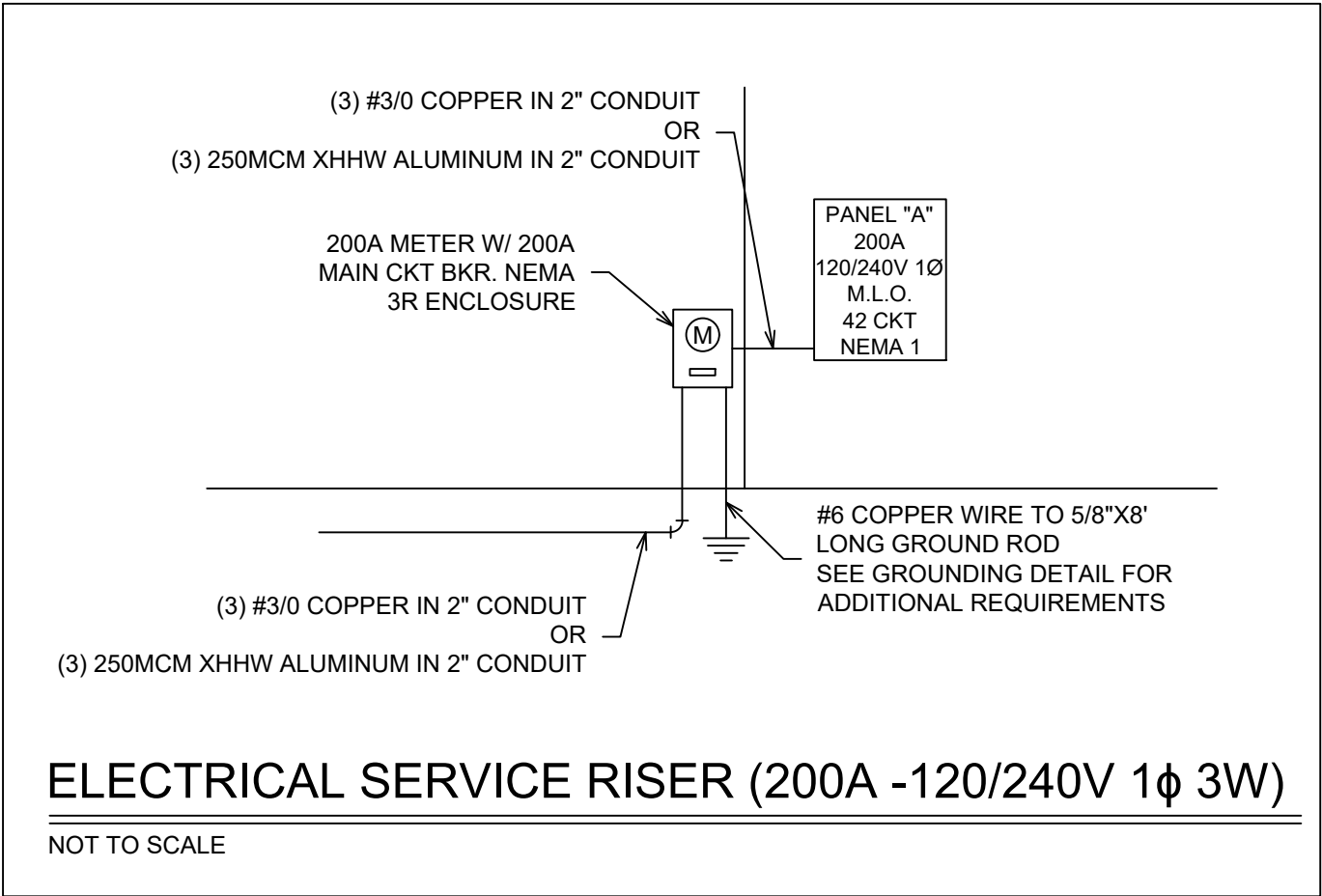
M3



#	KEYNOTES
1	METER IN RAINTIGHT ENCLOSURE WITH 200A CIRCUIT BREAKER DISCONNECT



**POWER PLAN**  
SCALE: 1/4" = 1'-0"

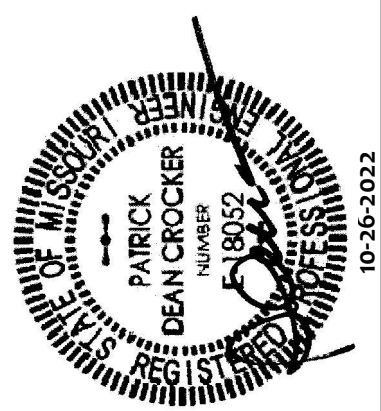


PANEL SCHEDULE										A
ROOM			VOLTS 240/120V 1-PH 3W				A/C 22,000			
MOUNTING FLUSH			BUS AMPS 200				MAIN BKR MLO			
FED FROM UTILITY			NEUTRAL 100%				LUGS STANDARD			
NOTE										
CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		LOAD KVA	CIRCUIT DESCRIPTION	CKT BKR	CKT #		
1	20/1	RECEPTACLE	1.08	a	4.5	WH-1	30/2	2		
3	20/1	RECEPTACLE	0.36	b				4		
5	20/1	RECEPTACLE	0.18	a	1.66	AHU-1	20/2	6		
7	20/1	RECEPTACLE	0.18	b				8		
9	20/1	RECEPTACLE	0.18	a	12.5	AHU-1E	70/2	10		
11	20/1	RECEPTACLE	1.44	b				12		
13	20/1	RECEPTACLE	0.36	a	8.1	CU-1	50/2	14		
15	20/1	RECEPTACLE	0.36	b				16		
17	30/1	GARAGE DOOR	2.4	a	0.225	LIGHTS	20/1	18		
19	20/1	RECEPTACLE	0.18	b	0.45	LIGHTS	20/1	20		
21	20/1	RECEPTACLE	0.72	a	0.545	LIGHTS	20/1	22		
23	20/1	RECEPTACLE	0.36	b	0.291	LIGHTING, LIGHTS	20/1	24		
25	20/1	RECEPTACLE	0.36	a	0.352	LIGHTING	20/1	26		
27	20/1	RECEPTACLE	0.18	b	0	SPACE	-/1	28		
29	-/1	SPACE	0	a	0	SPACE	-/1	30		
31	-/1	SPACE	0	b	0	SPACE	-/1	32		
33	-/1	SPACE	0	a	0	SPACE	-/1	34		
35	-/1	SPACE	0	b	0	SPACE	-/1	36		
37	-/1	SPACE	0	a	0	SPACE	-/1	38		
39	-/1	SPACE	0	b	0	SPACE	-/1	40		
41	-/1	SPACE	0	a	0	SPACE	-/1	42		



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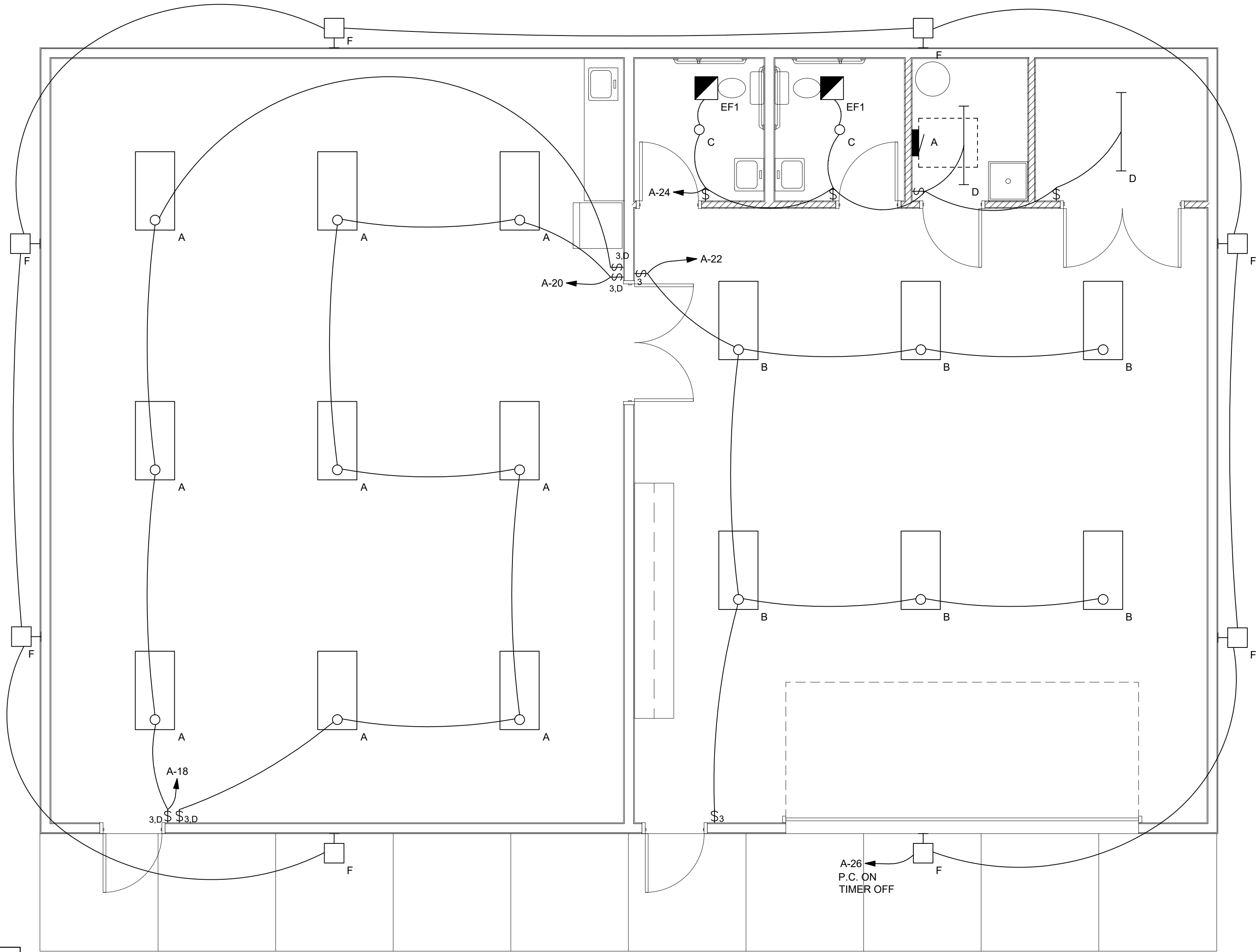
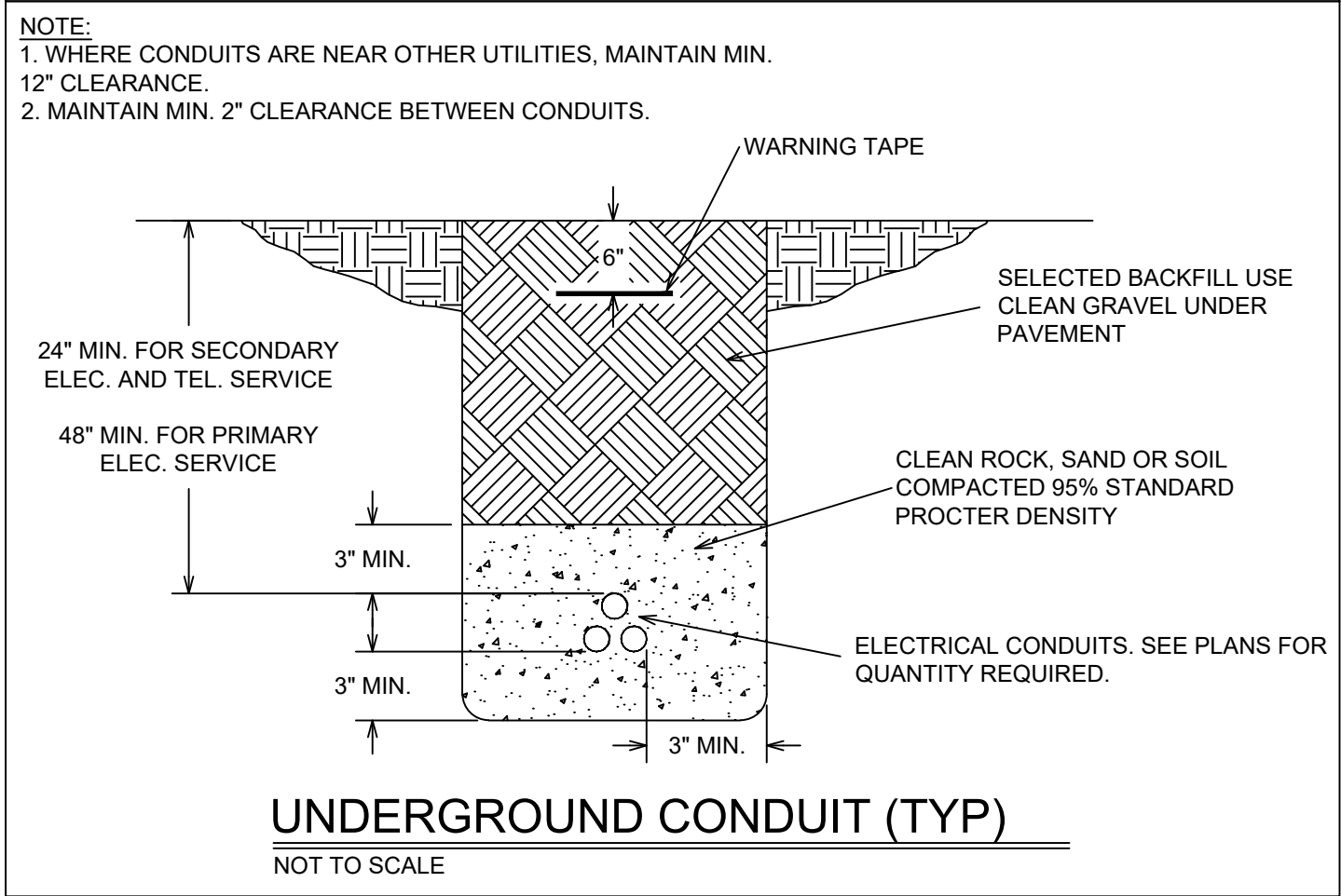
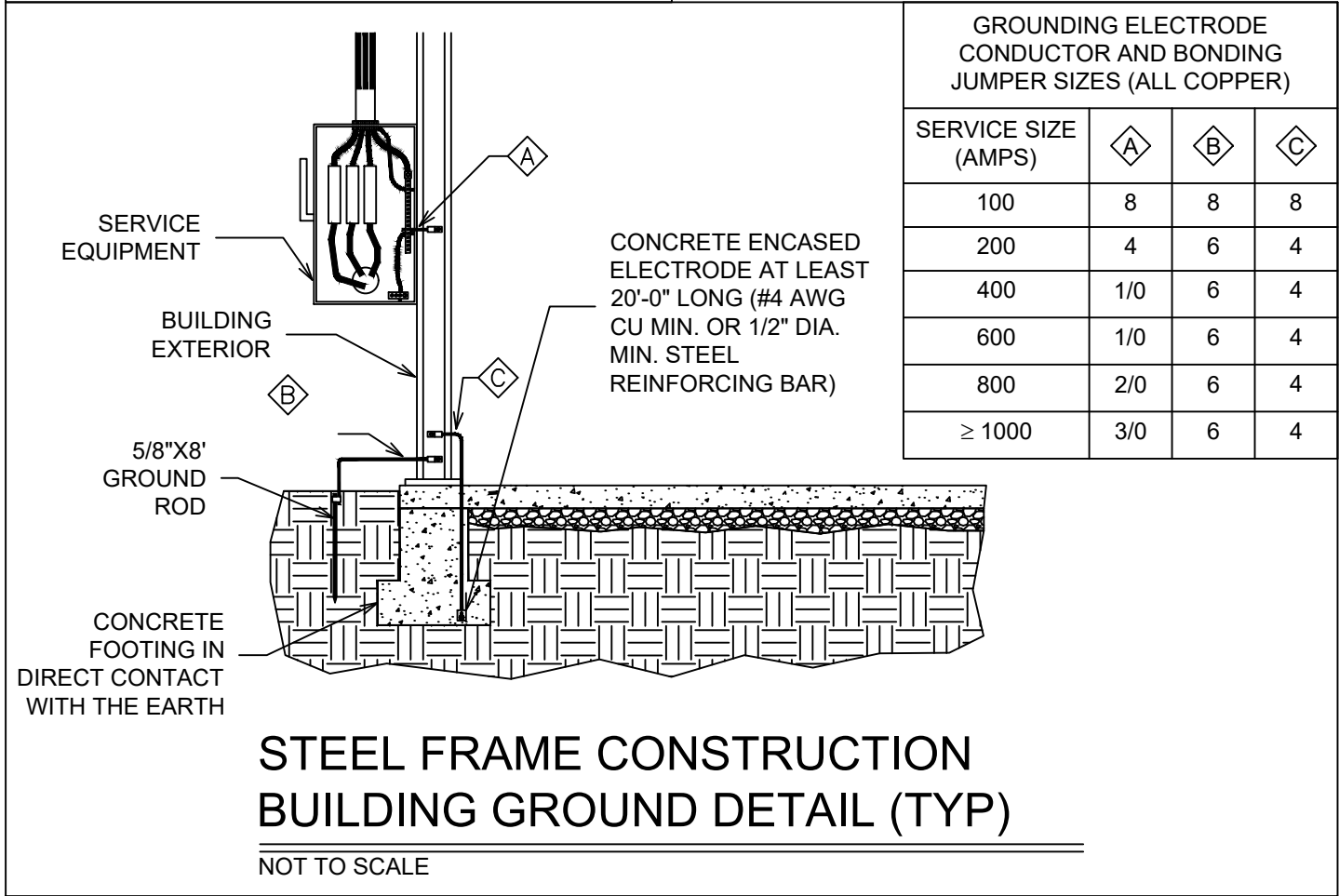
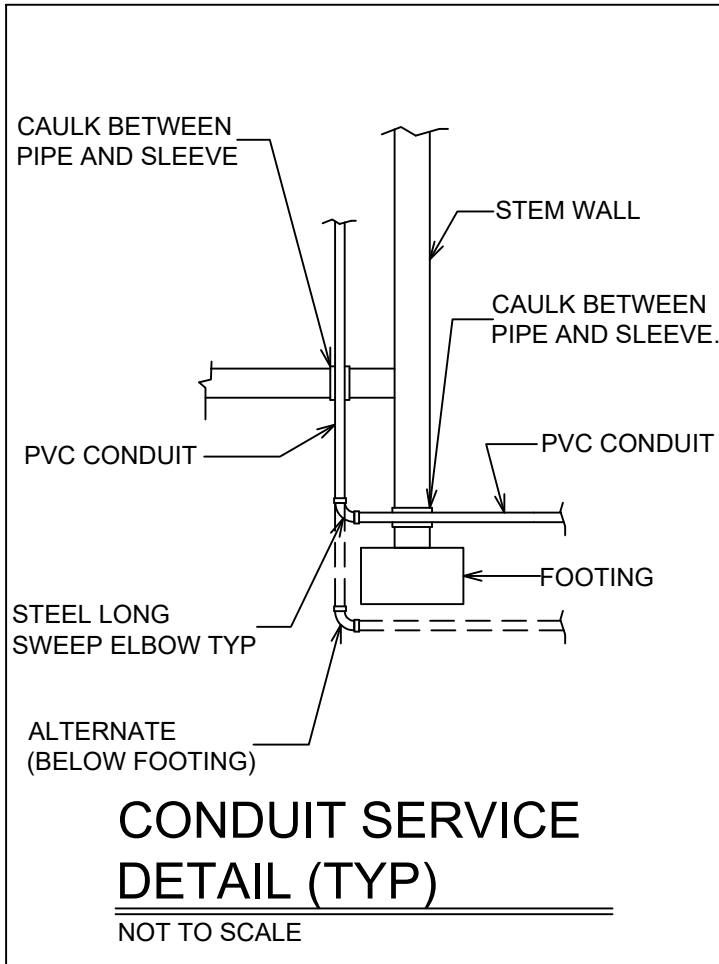
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E1



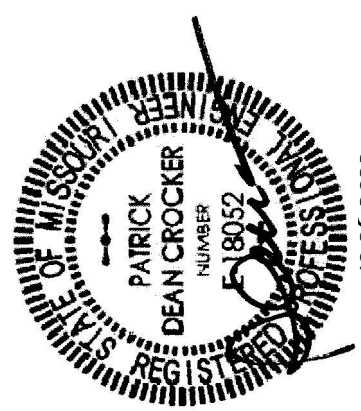


**LIGHTING PLAN**  
SCALE: 1/4" = 1'-0"

SWITCH SCHEDULE		
SYMBOL	CALLOUT	NOTES
\$ <sub>3.D</sub>	3-WAY DIMMABLE SWITCH	
\$ <sub>3</sub>	3-WAY SWITCH	
\$ <sub>D</sub>	DIMMABLE SWITCH	
\$	SINGLE POLE SWITCH	
\$ <sub>T</sub>	TIMER SWITCH	AMETEK NCC #TNC-T1517-120W, LIGHT TO TURN OFF AUTOMATICALLY, FAN TO TURN OFF WITH TIMER, TIMER ADJUSTABLE 1-60 MINUTES, SET @ 5 MIN.

LUMINAIRE SCHEDULE										
CALLOUT	SYMBOL	DESCRIPTION	MODEL	LAMP	BALLAST	MOUNTING	INPUT WATTS	VOLTS	NOTES	QUANTITY
A		LED 2x4 SURFACE MOUNT FIXTURE	WILLIAMS: 18-4-PL90/835-AF-DIM-UNV	(1) 75W LED	LED DRIVER	AIRCRAFT CABLE	75	120V 1P 2W		9
B		LED 2x4 SURFACE MOUNT FIXTURE	WILLIAMS: GH-4-L20/840	(1) 90.8W LED	LED DRIVER	AIRCRAFT CABLE	90.8	120V 1P 2W		6
C		6" LED ROUND CAN	WILLIAMS: H60-L64/830-SPC-M-LAD-DIM-120	(1) 72W LED	LED DRIVER	CEILING	72	120V 1P 2W		2
D		STRIP LIGHT	PRESCOLITE: 9400	(1) 9.5W LED		SURFACE	9.5	120V 1P 2W		2
EF1		RESTROOM EXHAUST FAN - FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR, DISCONNECT AND ELECTRICAL CONNECTION BY THE ELECTRICAL CONTRACTOR		(1)		CEILING	64	120V 1P 2W		2
F		FULL CUTOFF WALL MOUNTED LED	WILLIAMS:WPAS	(1) 44W LED		WALL	44	MULTIPLE	COORDINATE THE COLOR WITH THE ARCHITECT PRIOR TO ORDERING	4

1. THE E.C. IS RESPONSIBLE TO COUNT AND CONFIRM THE QUANTITIES OF THE FIXTURES IN THE PLANS PRIOR TO ORDERING.  
2. CONTRACTOR TO SUPPLY AND INSTALL ONE TIMER, SEVEN DAY, AND A PHOTOCELL FOR CONTROLLING THE OUTSIDE LIGHTS. PROVIDE PHOTO ELECTRIC CONTROLS AND LIGHTING CONTACTORS IN PROPER ENCLOSURES FOR EXTERIOR LIGHTS.  
3. PROVIDE 600 VOLT, 60 CYCLE ELECTRICALLY HELD LIGHTING CONTACTORS WITH PROPER NEMA ENCLOSURE REQUIRED BY CONTACTOR LOCATION AND ENVIRONMENT. PROVIDE CONTACTOR WITH INTERNAL WIRING AND CONTROL CIRCUITS PREWIRED WITH ONLY LINE, LOAD, AND EXTERNAL CONTROL CIRCUITS WIRING CONNECTION REQUIRED. PROVIDE CONTACTOR WITH BUILD-IN CLEARING INTERLOCKS TO ALLOW CONTROL FROM EITHER MOMENTARY OR MAINTAINED PILOT DEVICES. CONTACTORS BY ALLEN BRADLEY, CUTLER-HAMMER, FURNAS, ITE, CHALLENGER OR SQUARE "D".



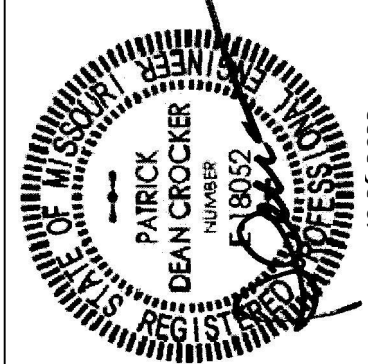


ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS	
1	THESE PLANS AND SPECIFICATIONS ARE EACH PART OF AN INTEGRATED DESIGN SYSTEM. ANY MODIFICATION, ALTERATION, CHANGE, DELETION, ADDITION, OR SUBSTITUTION, OF OR TO ANY PART OF THE PLANS OR SPECIFICATION COULD RESULT IN PROPERTY DAMAGE, INJURY, OR EVEN DEATH, AND REQUIRES A FULL REVIEW OF THE ENTIRE SYSTEM BY A PROFESSIONAL ENGINEER. ANY UNAUTHORIZED MODIFICATION OF THIS DOCUMENT MAY CONSTITUTE UNLICENSED PRACTICE AS A PROFESSIONAL ENGINEER AND MAY VIOLATE LAWS REGULATING THE PRACTICE OF ENGINEERING.	18	PROVIDE PROPER TYPE AND SIZE SLEEVES FOR ELECTRICAL DUCTS, BUSES, CONDUITS, ETC. PASSING THROUGH BUILDING CONSTRUCTION. WHERE SLEEVES ARE INSTALLED BY OTHERS, SUPERVISE INSTALLATION TO INSURE PROPER SLEEVE LOCATION. UNLESS INDICATED OR APPROVED, INSTALL NO SLEEVES IN STRUCTURAL MEMBERS. SLEEVES SHALL BE INSTALLED IN CONCRETE OR MASONRY WALLS OR FLOORS AND WHERE OTHERWISE NOTED.	42	ELECTRICAL CONTRACTOR TO COORDINATE WITH FINAL MECHANICAL EQUIPMENT SELECTED AND ITS RESPECTIVE ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND MECHANICAL DRAWINGS PRIOR TO ORDERING THE ELECTRICAL SWITCHGEAR, ETC. AND PRIOR TO PERFORMING WORK.	72	<u>APPLICABLE CODES</u>  IMC 2018 IPC 2018 IFGC 2018 NEC 2017
2	THIS APPLIES TO ALL MECHANICAL, ELECTRICAL & PLUMBING DRAWINGS: THESE DRAWINGS AND SPECIFICATIONS ARE NOT DETAILED FABRICATION DRAWINGS TYPICALLY SHOWN IN STEP BY STEP INSTRUCTIONS. THEIR INTENT IS TO ESTABLISH THE MINIMUM STANDARD OF PERFORMANCE THAT IS ACCEPTABLE FOR THIS PROJECT. MAJOR COMPONENTS ARE ITEMIZED AND SHOWN BUT, ALL THE WORK AND EACH INDIVIDUAL DEVICE IS NOT NECESSARILY DESCRIBED OR INDICATED IN INTRICATE DETAIL. THE CONTRACTOR IS EXPECTED TO INCLUDE THESE ITEMS IN HIS BID BY HIS FORESIGHT FROM PREVIOUS EXPERIENCE AND/OR WITH A DOLLAR CONTINGENCY AMOUNT FOR UNFORESEEN EXPENSES. THE CONTRACTOR SHOULD BE FAMILIAR WITH THE ARCHITECTURAL, STRUCTURAL, AND CIVIL PLANS ETC. BEFORE MAKING A BID. IF THE CONTRACTOR NEEDS STEP BY STEP INSTRUCTIONS TO COMPLETE THIS WORK OR IF HE IS NOT FAMILIAR WITH THE LOCAL CODES OR THE TYPE OF SYSTEMS BEING INSTALLED, HE IS ADVISED NOT TO SUBMIT A BID OR TO WORK ON THIS PROJECT. FIELD MEASURING AND COORDINATING WITH OTHER TRADES IS MANDATORY. ALTHOUGH THE DRAWINGS SHOULD BE SIMILAR TO THE ACTUAL DIMENSIONS, THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE DIMENSIONS OF THE WORK SHOWN. DO NOT SCALE DIMENSIONS OFF THE PLANS FOR FABRICATION. VERIFY WITH FIELD MEASUREMENT. COORDINATE WITH GENERAL CONTRACTOR EACH EQUIPMENT SIZE WITH THE LOCATION WHERE IT IS TO BE INSTALLED BEFORE ORDERING. NOTIFY THE ENGINEER IF SPACE DOES NOT ALLOW FOR EQUIPMENT SPECIFIED. ALL SUCH DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AND IT IS HIS RESPONSIBILITY TO FIT WORK INTO ALLOWED SPACE. ALL OFF-SETS AND SMALL CHANGES IN ROUTING ARE CONSIDERED A PART OF THE SCOPE OF THE BASE BID FOR THIS PROJECT AND SHALL BE APPROVED BY THE ENGINEER OR ARCHITECT BEFORE INSTALLATION.	19	MAIN SERVICE AND CONNECTIONS FROM METERS TO PANEL WIRING SHALL BE 600V COPPER BUILDING WIRE WITH THHN INSULATION. ALL WIRING SHALL BE SIZED IN ACCORDANCE WITH NEC TABLE 310-16. BRANCH CIRCUIT WIRING SHALL BE #12 MINIMUM. PROVIDE #10 AWG CONDUCTOR FOR ALL 20 AMP CIRCUITS WITH HOME RUNS LONGER THAN 100 FEET. CONCEALED UL LISTED MC CABLE IS ACCEPTABLE (WHEN APPROVED BY LOCAL BUILDING OFFICIALS). FOR BRANCH RUNS, EXPOSED M.C. CABLE IS NOT ALLOWED. THE MAIN CONDUIT FROM THE PANEL TO THE JUNCTION BOX WILL BE METAL CONDUIT. (U.N.O.)	43	VERIFY POWER REQUIREMENTS OF ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS PRIOR TO ORDERING OF MATERIAL AND/OR ROUGH-IN.	73	THE ELECTRICAL CONTRACTOR SHALL FURNISH COMPLETE "AS BUILT" DRAWINGS UPON COMPLETION OF THE WORK. THESE DRAWINGS SHALL BE NEATLY MARKED PRINTS OF THE ELECTRICAL DRAWINGS WHEN ONLY MINOR CHANGES ARE MADE. MAINTAIN A REPRODUCIBLE SET OF CONTRACT DRAWINGS AND SHOP DRAWINGS IN CLEAN, UNDAMAGED CONDITION, WITH MARK-UP OF ACTUAL INSTALLATIONS WHICH VARY SUBSTANTIALLY FROM THE WORK AS ORIGINALLY SHOWN. MARK COVER SHEETS, AND PRINT SUITABLE TITLES, DATE AND OTHER IDENTIFICATION ON COVER OF EACH SHEET.
3	THE ENGINEER IS NOT RESPONSIBLE FOR FIELD ACTIVITIES ON THIS PROJECT WITHOUT DIRECT INSPECTION OF WORK IN PROGRESS. FIELD INSPECTIONS ARE TO BE COORDINATED BY ARCHITECT. IT IS NEITHER EXPRESSED NOR IMPLIED THAT THE CONTRACTOR CAN CONSTRUCT THIS PROJECT WITHOUT THE ARCHITECT'S FIELD INSPECTIONS. IF FIELD CONDITIONS ARE UNCOVERED THAT REQUIRE A CHANGE OR ADDITIONAL INFORMATION THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY. THE ARCHITECT WILL THEN NOTIFY THE ENGINEER. THE ARCHITECT DOES NOT DELEGATE HIS AUTHORITY TO ANYONE ELSE FOR DETERMINING THE MEANING OF HIS PLANS OR SPECIFICATIONS.	20	MAIN SERVICE WIRING AND WIRING FROM METERS TO INDIVIDUAL PANELS TO BE INSTALLED IN EMT METAL CONDUIT SIZED IN ACCORDANCE WITH NEC TABLE 3B. (U.N.O.)	44	MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. WIRING CABLE AND RACEWAYS PERMITTED BY THIS SECTION SHALL BE LISTED AND LABELED AS PLENUM-RATED AND SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70.	74	CONTRACTOR IS TO PROVIDE SUBMITTALS WHICH SHALL INCLUDE (2) SETS OF SHOP DRAWINGS AND ANY ADDITIONAL INFORMATION REQUIRED FOR INSTALLATION, ADJUSTMENT, OPERATIONS AND MAINTENANCE OF MANUFACTURERS DATA ON ALL LIGHTING FIXTURES, SWITCHES, RECEPTACLES, SWITCHGEAR AND SAFETY SWITCHES, SHOP DRAWINGS, DIAGRAMS OR DIMENSIONED PRINTS INCLUDING PICTORIAL CATALOG CUT SHEETS WHICH ARE CALLED FOR IN SPECIFICATIONS. IDENTIFY EACH SUBMITTAL BY SPECIFICATION, DIVISION, NUMBER OR BY DESIGNATION ON THE DRAWINGS IN A LETTER OF TRANSMITTAL. THE SHOP DRAWING WILL BE REVIEWED, MARKED UP AND THEN SCANNED IN, AND E-MAILED TO THE SHOP DRAWING DISTRIBUTION LIST, WHICH THEY THEN CAN PRINT AS MANY COPIES AS THEY WISH. SHOP DRAWING DISTRIBUTION: ARCHITECT, OWNERS REPRESENTATIVE, GENERAL CONTRACTOR. ALL SHOP DRAWINGS MUST BE NO LARGER THEN 11"x17" SIZE PER SHEET (SUBMITTALS SHOULD BE SUBMITTED PRIOR TO ORDERING ANY EQUIPMENT.) PURCHASE NO MATERIAL OR EQUIPMENT UNTIL SUBMITTALS HAVE BEEN APPROVED.
4	CONTRACTOR IS TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH ALL ON-SITE CONDITIONS, VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING CONDITIONS, AND MAKE CONNECTIONS TO LOCAL UTILITY COMPANY REQUIREMENTS AND IN ACCORDANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS. THE CONTRACTOR IS TO CONTACT THE LOCAL UTILITY COMPANY(S) & TO CONFIRM THE SCOPE OF RESPONSIBILITY FOR ALL UTILITY CONNECTION.	21	PROVIDE SCH 40 PVC CONDUIT FOR THE SERVICE ENTRANCE CONDUCTORS FOR ABOVE GRADE CONDUIT AND LONG SWEEP STEEL OR PVC ELBOWS FOR UNDERGROUND CONDUIT. PVC CONDUIT SCH 40 IS ACCEPTABLE FOR UNDERGROUND CONDUIT.	45	E.C. TO PROVIDE CONDUIT AND WIRING FOR ALL POWER TO HVAC EQUIPMENT. E.C. TO PROVIDE CONDUIT FOR THERMOSTAT LOCATION (WALL BOX 3/4" CONDUIT STUBBED UP ABOVE CEILING), M.C. TO PROVIDE THERMOSTATS. E.C. IS TO PROVIDE MATERIALS AND PULL THERMOSTAT WIRING M.C. IS TO MAKE WIRING CONNECTIONS FOR THERMOSTAT AND HVAC CONTROLS. E.C. IS TO MAKE WIRING CONNECTIONS FOR POWER. INSTALL AND WIRE ALL OTHER POWER AND CONTROLS FURNISHED BY THE PLUMBING AND HVAC CONTRACTORS.	75	ELECTRICAL CONTRACTOR TO PROVIDE MINIMUM OF SIX (6) SPARE 20 AMP, 1 POLE BREAKERS FOR ALL NEW ELECTRICAL PANELS.
5	IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR CONNECTION AND TO COORDINATE ALL UTILITY SERVICES TO THE FACILITIES/BUILDING. THE CONTRACTOR IS TO INCLUDE ALL COSTS, FEES, CHARGES, ETC. ASSOCIATED WITH THE CONNECTION OF NEW SERVICES (OR IN THE EVENT OF RENOVATIONS TO AN EXISTING BUILDING, MODIFICATIONS TO EXISTING SERVICES) FOR THE BUILDING. ALL WORK IS TO BE DONE IN ACCORDANCE WITH ALL LOCAL CODES, THE UTILITY COMPANY(S) STANDARDS, AND THE CURRENT INTERNATIONAL BUILDING CODE. COORDINATE ALL ROUGH-INS WITH THE OWNER.	22	WIRE SIZES ARE BASED ON THREE CURRENT-CARRYING CONDUCTORS IN A RACEWAY, CABLE OR DIRECTLY BURIED. WHERE THE QUANTITY EXCEEDS THREE THE AMPACITIES SHALL BE REDUCED IN COMPLIANCE WITH THE NEC AND SIZES ADJUSTED ACCORDINGLY.	46	CONTRACTOR IS TO FOLLOW ALL MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION OF EQUIPMENT.	76	E.C. TO STUB OUT A 3/4" CONDUIT AND JUNCTION BOX FOR SIGNAGE. CONDUIT TO EXTEND 5' INTERIOR OF BUILDING AWAY FROM EXTERIOR WALL. COORDINATE LOCATION WITH ARCHITECT.
6	CONTRACTOR SHALL CONTACT THE LOCAL ELECTRICAL UTILITY COMPANY AND ARRANGE FOR ELECTRICAL SERVICE AS INDICATED ON DRAWINGS. INCLUDE ALL COSTS, CHARGES, FEES, ETC., INCURRED BY UTILITY COMPANY INTO BID. PROVIDE ALL MATERIALS AS REQUIRED BY LOCAL AUTHORITIES FOR ELECTRIC SERVICE INSTALLATION. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT NATIONAL ELECTRICAL CODE (NEC), WITH THE CURRENT NFPA LIFE SAFETY CODE, AND WITH THE REQUIREMENTS OF LOCAL AUTHORITIES. ALL CONNECTIONS AND ARRANGEMENTS ARE TO BE MADE BY THIS CONTRACTOR.	23	BRANCH CIRCUIT CONDUCTOR TO BE COPPER WITH THHN/THWN INSULATION AND SIZED AT THE 90°C RATING FOR CIRCUITS LESS THAN 800 AMPERES AND AT THE 75°C RATING FOR CIRCUITS OF 800 AMPERES OR GREATER.	47	CONDUIT CONNECTORS MAY BE SET SCREW TYPE FOR INTERIOR AND COMPRESSION TYPE FOR EXTERIOR.	77	INDIVIDUAL RECEPTACLES SERVED BY A BRANCH CIRCUIT BREAKER SHALL BE RATED FOR THE CIRCUIT AMPACITY.
7	UNDER GROUND ELECTRICAL SERVICE: CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND OWNER TO ARRANGE FOR ELECTRICAL SERVICE MODIFICATION AS INDICATED ON DRAWINGS. CONTACT THE LOCAL ELECTRICAL UTILITY COMPANY AND ARRANGE FOR ELECTRICAL SERVICE AS INDICATED ON DRAWINGS. INCLUDE ALL COSTS, CHARGES, FEES, ETC., INCURRED BY UTILITY COMPANY INTO BID. PROVIDE ALL MATERIALS AS REQUIRED BY LOCAL AUTHORITIES FOR ELECTRIC SERVICE INSTALLATION. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT NATIONAL ELECTRICAL CODE (NEC), WITH THE CURRENT NFPA LIFE SAFETY CODE, AND WITH THE REQUIREMENTS OF LOCAL AUTHORITIES. NORMALLY THE UTILITY COMPANY SHALL PROVIDE THE PAD MOUNTED TRANSFORMER, METER, AND PRIMARY WIRING. NORMALLY THE CONTRACTOR SHALL PROVIDE THE CONCRETE PAD FOR THE TRANSFORMER, THE CT CABINET, METER BASE, ASSOCIATED TRENCHING AND BACKFILL FROM THE ELECTRIC JUNCTION CABINET TO THE TRANSFORMER, AS WELL AS ALL CONDUIT AND WIRE FROM THE TRANSFORMER TO THE CT CABINET, AND/OR BUILDING ELECTRIC SERVICE AS SHOWN ON THE ELECTRIC SERVICE RISER DIAGRAM. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM WHAT IS OR IS NOT PROVIDED BY THE UTILITY COMPANY AND TO INCLUDE ALL COST TO PROVIDE A COMPLETE ELECTRICAL CONNECTION INTO HIS BID.	24	PROVIDE CONDUCTORS FOR LISTED APPLICATIONS AS FOLLOWS:  LIGHTING AND RECEPTACLE CIRCUITS: TYPE THHN, 600 VOLT, 75 DEGREE C (194 DEGREES F) THERMOPLASTIC INSULATED BUILDING CONDUCTOR.  POWER CIRCUITS AND FEEDERS: TYPE THHN, 600 VOLT, 74 DEGREE C (194 DEGREES F) THERMOPLASTIC INSULATED BUILDING CONDUCTOR.  LOW VOLTAGE AND LINE VOLTAGE CONDUCTORS SIZES NO. 16 AND NO. 18 AWG: TYPE TFFN, 600 VOLT 90 DEGREES C (194 DEGREES F) THERMOPLASTIC INSULATED BUILDING CONDUCTOR.  UNDERGROUND POWER CIRCUITS AND FEEDERS: TYPE THHN/TWHN, 600 VOLT, 75 DEGREE C (167 DEGREES F) WET RATING AND 90 DEGREES C (194 DEGREES F) DRY RATED THERMOSETTING FILLED INSULATING CABLE.	48	TEMPORARY INTERIOR CONSTRUCTION LIGHTING IS TO BE FURNISHED AND INSTALLED BY THE E.C.	78	THE PHOTOMETRIC OF THE EXTERIOR LIGHTING WILL BE A MAXIMUM OF 1/2-FOOT CANDLE ON THE PROPERTY LINE, WITH AN AVERAGE OF 5-FOOT CANDLE OVER THE EXTERIOR PROPERTY. NOTE THAT THE WALL-PAKS ARE SPECIFIED TO HAVE SHIELDS TO CONFINE THE LIGHT TO THIS PROPERTY.
8	ALL WIRING/CONTROL DEVICES REQUIRED FOR THE OPERATION OF ALL EQUIPMENT WILL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. WIRING DIAGRAMS WILL BE PROVIDED TO THE ELECTRICAL CONTRACTOR BY THE MECHANICAL CONTRACTOR FOR ALL MECHANICAL EQUIPMENT.	25	POWER AND LIGHTING CONDUCTORS SHALL BE COPPER BUILDING WIRE, 600 VOLT, THWN/THHN AND NOT SMALLER THAN #12 AWG. COMMUNICATION AND DATA CABLE SHALL BE COPPER, 300 VOLT, AND LISTED FOR USE IN THE LOCATION IN WHICH IT IS INSTALLED. TEMPERATURE CONTROL CONDUCTORS SHALL BE COLOR CODED AND A MINIMUM OF #16 STRANDED COPPER, THWN. SERVICES AND FEEDERS ABOVE GROUND SHALL BE 90°C THHN. BELOW GROUND SHALL BE 75°C THHN. WIRING THRU FLOURESCENT FIXTURES SHALL BE THHN. ALL BRANCH CIRCUITS SHALL HAVE A GREEN GROUNDING CONDUCTOR SIZED IN COMPLIANCE WITH TABLE 250.122 OF THE NATIONAL ELECTRICAL CODE, ROUTED WITH THE BRANCH CIRCUIT CONDUCTORS.	49	WEATHERPROOF RECEPTACLES SHALL BE GFI TYPE MOUNTED IN APPROPRIATE WEATHERPROOF BOX W/ LIFT COVER/PLATE.	79	ALL POLE MOUNTED LIGHT FIXTURES WILL HAVE RE-ENFORCED CONCRETE BASE, EACH WITH 5/8" X 8' LONG GROUND ROD & #6 BARE COPPER GROUND WIRE, AND CLAMPS.
9	THE ELECTRICAL SERVICE SHALL BE AS INDICATED BY THE DRAWINGS.	26	INSTALL CONDUIT PARALLEL AND PERPENDICULAR TO THE LINES OF THE BUILDING. SUPPORT CONDUIT WITH MANUFACTURED HANGERS SPACED IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE. PENETRATIONS OF EXTERIOR WALLS SHALL BE MADE WATERTIGHT. INTERIOR WALL AND FLOOR PENETRATIONS SHALL BE SLEEVED WITH SCHEDULE 10 PIPE SLEEVES. FIRE RATED PENETRATIONS WILL BE PROTECTED WITH UL LISTED THROUGH-PENETRATION SYSTEMS SUITABLE FOR THE CONSTRUCTION PENETRATED. AT RECESSED PANELS WHERE THERE IS AN ACCESSIBLE CEILING, PROVIDE A MINIMUM OF ONE EMPTY 1" CONDUIT STUBBED ABOVE THE CEILING FOR FUTURE CIRCUITS. VERTICAL CABLE RUNS SHALL BE SUPPORTED WITH INSULATING SUPPORT DEVICES INSTALLED IN COVERED JUNCTION BOXES AT NEC MAXIMUM DISTANCES.	50	E.C. SHALL FURNISH A TYPED CIRCUIT DIRECTORY FOR ALL PANELS - DIRECTORY INFORMATION SHALL INCLUDE CIRCUIT NUMBER AND EQUIPMENT SERVED.	80	NO CONDUIT, PIPING, DUCTS, EQUIPMENT, ETC., SHALL BE ROUTED THROUGH OR ABOVE THE ELEVATOR EQUIPMENT ROOM EXCEPT WHAT IS NECESSARY FOR THE OPERATION OF THE ELEVATOR EQUIPMENT.
10	THE ELECTRICAL CONTRACTOR IS TO BID THE PROJECT AND PERFORM THE WORK FOR A COMPLETE OPERATING SYSTEM. THEREFORE, IT SHALL BE UNDERSTOOD THAT ALL THE ITEMS SHALL BE INCLUDED FOR AN OPERATING SYSTEM WHETHER ALL SPECIFIC FITTINGS AND ACCESSORIES ARE SPECIFIED IN SPECIFICATIONS OR SHOWN ON DRAWINGS. PROVIDE ALL HARDWARE AND ACCESSORIES NECESSARY FOR A COMPLETE ELECTRICAL INSTALLATION.	27	INSTALL ALL BOXES SQUARE AND PLUMB, SECURELY FASTENED AND FLUSH WITH THE FINISHED SURFACE.	51	E.C. TO PROVIDE A WP/GFI RECEPTACLE NEAR UNITS FOR SERVICING OF MECHANICAL UNITS.	81	ALL PENETRATIONS THROUGH THE ROOF, THE FLOOR, OR EXTERIOR WALLS SHALL BE SEALED, CAULKED, GASKETED, OR WEATHER-STRIPPED TO MINIMIZE AIR LEAKAGE.
11	THE ELECTRICAL CONTRACTOR SHALL SUPPLY ALL PERMITS, LABOR, MATERIAL AND EQUIPMENT FOR A COMPLETE JOB IN ACCORDANCE WITH THE PLANS AND COMPLYING WITH THE NEC AND ALL LOCAL CODES AND ORDINANCES. SECURE AND PAY FOR ALL FEES, PERMITS, LICENSES AND INSPECTIONS NECESSARY.	28	VERIFY PROPER CLEARANCE IS AVAILABLE FOR THE EQUIPMENT PROPOSED.	52	COORDINATE FINAL MOUNTING HEIGHTS OF LIGHTS AND FANS WITH OWNER AND ARCHITECT.		
12	THE CONTRACTOR SHALL INSPECT THE JOB SITE AND REVIEW THE PLANS. ANY DEVIATIONS, ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING. REQUESTS FOR ADDITIONAL FUNDS FOR EXTRA WORK WILL NOT BE HONORED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER. FIELD VERIFY ALL EXISTING AND NEW CONDITIONS.	29	ALL WIRING IN FINISHED SPACES SHALL BE CONCEALED, UNLESS NOTED OTHERWISE.	53	COORDINATE FINAL FINISH COLORS OF LIGHTS AND FANS WITH OWNER AND ARCHITECT.		
13	CONTRACTORS ARE TO VISIT THE JOB SITE, TO INSPECT ANY AND ALL EQUIPMENT AT THE SITE, TO INSPECT ANY AND ALL EQUIPMENT THAT IS BEING PURCHASED AND/OR MOVED FROM ANOTHER LOCATION OR SITE TO THE NEW SITE, TO CHECK ANY AND ALL NAMEPLATES AND TO VERIFY UTILITY REQUIREMENTS, THEN TO VERIFY, CONFIRM AND COORDINATE WITH THE DRAWINGS. DISCREPANCIES ARE TO BE COORDINATED WITH THE ENGINEER. CONTRACTOR INSPECTIONS AND VERIFICATIONS ARE TO BE PRIOR TO PREPARING THE NEW SITE.	30	THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE AND FUNCTIONAL SYSTEM IN ACCORDANCE WITH THE INTENT OF THE PLANS. WHETHER OR NOT EVERY ELEMENT THEREOF IS SPECIFICALLY CALLED OUT.	54	TELEPHONE JACK LOCATIONS ARE NOT KNOWN OR SPECIFIED BY THE OWNER AT THE TIME OF THIS DRAWING. E.C. TO COORDINATE WITH THE TENANT/OWNER FOR LOCATIONS AND TO PROVIDE A PROPER TELEPHONE JACK UNDER THEIR DIRECTION. PROVIDE TELEPHONE OUTLET BOXES WITH EMPTY 3/4" CONDUIT STUBBED TO AN ACCESSIBLE LOCATION. TELEPHONE EQUIPMENT, WIRING AND SERVICE ARRANGEMENTS TO BE PROVIDED BY OWNER		
14	CONTRACTOR SHALL SCHEDULE AND EXECUTE ALL WORK WITH REGARD TO THE OWNER'S USE OF THE BUILDING, BOTH EXISTING AND NEW.	31	DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE SCALED FOR DIMENSIONS. REFER TO ARCHITECTURAL DRAWINGS AND FIELD MEASUREMENTS FOR FINAL DIMENSIONS.	55	E.C. TO SUBMIT TO OWNER AND ARCHITECT CATALOG CUTS OF LIGHT FIXTURES AND ELECTRICAL DEVICES PRIOR TO ORDERING TO CONFIRM FINAL SELECTION.		
15	ADHERE TO OSHA REGULATIONS AND TO ELECTRICAL INDUSTRY SAFETY PRACTICES.	32	IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO BALANCE THE ELECTRICAL LOADS AT THE COMPLETION OF THE PROJECT.	56	E.C. TO COORDINATE WITH THE OWNER AND ARCHITECT FOR PLACEMENT OF ALL WIRING DEVICE BOXES (SWITCH, RECEPTACLE, TELEPHONE-COMMUNICATION) PRIOR TO INSTALLATION OF ROUGH-IN. IT IS THE E.C.'S RESPONSIBILITY TO CONFIRM WITH THE OWNER AND ARCHITECT FOR FINAL LAYOUT.		
16	EXCAVATION AND BACKFILL - PROVIDE STREET PLATES, BARRICADES, WARNING LIGHTS, SHORING, BRACING AND DE-WATERING AS REQUIRED. CONDUCT EXCAVATIONS SO THAT WALLS, FOOTINGS AND ADJOINING PROPERTY ARE NOT DISTURBED OR INJURED. INSTALL CONDUIT ON A 6" THICK BED OF PEA GRAVEL AND COVER TO 12" ABOVE THE CONDUIT WITH PEA GRAVEL. BACKFILL WITH ALLOWANCE FOR SETTLEMENT. WIRE MATERIAL CONTAINING ROCK NO LARGER THAN 6" AND TAMP TO 95% COMPACTION. DISPOSE OF SPOILS AS DIRECTED BY THE ARCHITECT. WHEN AVAILABLE REFER TO TEST HOLE INFORMATION ON ARCHITECTURAL DRAWINGS OR SPECIFICATIONS.	33	GROUNDING AND BONDING SHALL BE IN COMPLIANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRIC CODE. GROUND CONNECTION AT THE MAIN SERVICE EQUIPMENT SHALL BE MADE TO THE METALLIC WATER SERVICE AND/OR TO A COPPER CLAD ROD, 5/8 X 8' LONG, WHEN AVAILABLE BOND TO ALL METALLIC WATER PIPING, THE METAL FRAME OF THE BUILDING, A CONCRETE ENCASED ELECTRODE, AND GROUNDING AT THE SERVICE TRANSFORMER. MAXIMUM RESISTANCE OF THE GROUNDING SYSTEM SHALL BE FIVE (5) OHMS.	57	E.C. TO PROVIDE LABEL AT PANELBOARD DESIGNATING "EMERGENCY AND EXIT LIGHTING CONNECTED TO THIS CIRCUIT".		
17	ALL NEW MATERIALS AND EQUIPMENT MUST BEAR THE INSPECTION LABEL OF THE NATIONAL BOARD OF FIRE UNDERWRITERS AND/OR UNDERWRITERS LABORATORY.	34	SWITCHGEAR SHALL BE UL LISTED AND RATED FOR SERVICE ENTRANCE DUTY WHERE APPLICABLE. TERMINALS SHALL BE LISTED FOR USE WITH 75°C CONDUCTORS. PROVIDE NEMA1 ENCLOSURES FOR INDOOR USE AND NEMA 3R ENCLOSURES FOR OUTDOOR USE. PANEL BOARDS SHALL BE OF THE DEAD FRONT TYPE AND SHALL HAVE COPPER BUS. THE CIRCUIT DIRECTORY SHALL BE FILLED OUT UPON COMPLETION OF THE PROJECT. CIRCUIT BREAKERS SHALL BE SERIES RATED, QUICK-MAKE, QUICK-BREAK.	58	EMERGENCY LIGHTING CIRCUITS ARE TO BE CONNECTED TO THE CIRCUITS SHOWN ON THE DRAWINGS. THE EMERGENCY AND EXIT LIGHTING IS TO BE CONNECTED TO THE "LINE SIDE" OF EACH RESPECTIVE CIRCUIT, SO THAT THEY ARE NEVER INTERRUPTED BY A SWITCH. THEY WILL BE SENSING POWER TO THE LIGHTING CIRCUITS PRIOR TO ANY SWITCHES. THIS WILL ENABLE THE EMERGENCY AND EXITS TO GO TO THE BATTERY BACKUP IN THE EVENT OF POWER FAILURE. THE CIRCUIT BREAKERS AT THE PANEL THAT THE EXIT AND EMERGENCY LIGHTS ARE CONNECTED TO ARE TO BE LABELED "EXIT AND EMERGENCY LIGHTING CONNECTED TO THIS BREAKER...DO NOT TURN OFF". THE ELECTRICAL CONTRACTOR IS TO INSTALL LIGHT SWITCHES TO TURN LIGHTS ON AND OFF RATHER THAN USE THE CIRCUIT BREAKER AT THE PANELS FOR TURNING LIGHTING ON AND OFF.		
		35	PROVIDE PANELBOARD WITH BOLT-ON OR PLUG-ON MOLDED CASE CIRCUIT BREAKERS, AND TIN-FINISHED COPPER BARS AS LISTED IN SCHEDULE. PANELBOARD SHALL BE GENERAL ELECTRIC, ITE GOULD, SQUARE "D", CHALLENGER OR CUTLER-HAMMER.	59	LIGHTING FIXTURES SHALL BE SPECIFICATION GRADE AND LAMPED AS SCHEDULED.		
		36	ALL DISCONNECTS LOCATED INSIDE THE BUILDING SHALL BE NEMA-1. ALL DISCONNECTS LOCATED OUTSIDE THE BUILDING SHALL BE NEMA-3R. ALL DISCONNECTS SHALL BE STANDARD DUTY UNLESS OTHERWISE SPECIFIED.	60	LIGHT FIXTURES SHALL BE AS SPECIFIED COMPLETE WITH REQUIRED MOUNTING HARDWARE, BALLAST, LAMPS, ETC.		
		37	PROVIDE HEAVY DUTY AND GENERAL DUTY HORSEPOWER RATED SAFETY SWITCHES RATED IN ACCORDANCE WITH NEMA ENCLOSED SWITCH STANDARD KS-1-1975 AND UL 98 STANDARD AND AS SCHEDULED. FUSE HOLDERS FOR 1 TO 600 AMPERES SHALL BE HIGH PRESSURE TYPE FOR USE WITH CLASS R CURRENT LIMITING FUSES. FUSE HOLDERS SHALL BE COMPLETELY ACCESSIBLE FROM FRONT OF SWITCH. PROVIDE SWITCHES BY CUTLER-HAMMER, GENERAL ELECTRIC, ITE GOULD, SQUARE "D", CHALLENGER OR WESTINGHOUSE.	61	THERE IS NO FIRE ALARM SYSTEM PRESENTLY IN THIS TENANT INFILL AREA. IF A FIRE ALARM SYSTEM IS REQUIRED IT WILL NEED TO BE COORDINATED WITH THE ELECTRICAL CONTRACTOR.		
		38	ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE FIRESTOPPED WITH PUTTY PADS, INTUMESCENT RECESSED LIGHT FIXTURE COVERS, FIRECAULK, ETC. THAT IS LISTED FOR THE SPECIFIC ASSEMBLY BEING PENETRATED AND FOR THE SIZE AND TYPE OF MATERIAL THAT PENETRATES THE ASSEMBLY.	62	SPECIFICATION REQUIREMENTS ARE THAT THE DIFFERENT TRADES ARE TO COORDINATE WITH EACH OTHER. THE MECHANICAL CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE PLUMBING AND ELECTRICAL SHEETS. THE PLUMBING CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE MECHANICAL AND ELECTRICAL SHEETS. THE ELECTRICAL CONTRACTOR IS TO LOOK AT AND BE FAMILIAR WITH THE PLUMBING AND MECHANICAL SHEETS. COORDINATE DOES NOT MEAN "I WAS HERE FIRST".		
		39	COLOR OF COVERPLATES TO BE SELECTED BY ARCHITECT. COVERPLATES TO BE STAINLESS STEEL UNLESS NOTED OTHERWISE ON DRAWING, OR IN WRITING BY ARCHITECT.	63	WIRING AND/OR CONDUIT FOR SOUND SYSTEM, INTERCOM, PA, ETC. IS NOT KNOWN AT THIS TIME.		
		40	IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE ALL DEMOLITION WORK, REMOVAL OF ELECTRICAL TO EQUIPMENT, AND CONNECTION TO NEW EQUIPMENT.	64	E.C. TO COORDINATE ALL DEMOLITION WORK IN REGARDS TO THIS PROJECT.		
		41	CHECK REFLECTED CEILING PLAN FOR CORRECT PLACEMENT OF RECESSED LIGHTS.	65	GUARANTEE ALL EQUIPMENT, MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF ACCEPTANCE.		
				66	UNLESS NOTED OTHERWISE, THE FOLLOWING SHALL BE THE HEIGHT FROM FINISHED FLOOR: 60" TO CENTER WALL PHONE OUTLETS 48" TO CENTER LIGHT SWITCHES 48" TO CENTER THERMOSTATS 16" TO BOTTOM CONVENIENCE OUTLETS 16" TO BOTTOM TELEPHONE OUTLETS		
				67	ALL RECEPTACLES INSTALLED IN BATHROOMS, OUTDOORS, AND WITHIN 6 FEET OF A SINK, LAVATORY, ETC. SHALL BE GFCI TYPE OR PROTECTED BY A GFI DEVICE.		
				68	ALL WIRING ABOVE GRADE SHALL BE IN CONDUIT. SERVICE CONDUCTOR CONDUIT LOCATED OUTDOORS AND ABOVE GRADE SHALL BE IMC, EMT, RIGID, OR SCH 80 PVC. ALL WIRING BELOW GRADE SHALL BE IN PVC. TYPE MC CABLE MAY BE USED FOR BRANCH CIRCUIT WIRING EXCEPT HOME RUNS WILL BE CONDUIT WITH INTERNAL WIRING.		
				69	THE E.C. IS RESPONSIBLE FOR REMOVING ALL MAINTENANCE AND INSTALLATION MANUALS AND INSTRUCTIONS FROM COMPONENTS THAT HE IS INSTALLING AND GIVING SUCH DATA TO THE OWNER AND/OR TENANT.		
				70	THE E.C. IS FULLY RESPONSIBLE FOR ANY AND ALL ADDITIONAL OR SPECIAL REQUIREMENTS MADE BY THE MANUFACTURER OF THE EQUIPMENT THAT HE IS PURCHASING AND INSTALLING AS PART OF HIS SCOPE OF WORK. THIS INCLUDES ADDITIONAL COSTS FOR BOTH MATERIAL AND LABOR.		
				71	ALL ITEMS EXPOSED TO THE EXTERIOR ARE TO BE "PAINTED TO MATCH ADJACENT MATERIALS." IT IS THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE THIS IN HIS COSTING AND TO BE RESPONSIBLE FOR THIS.		



New Training Building  
Nixa Police Department Shooting Range  
Nixa, Christian County, MO 65741

City of Nixa, Missouri  
Nixa, Christian County, MO 65741



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Engineer | Patrick D. Crocker  
License#: E-18052  
COA#: E-2008010470

Project Number: 2022-082  
Date: October 26, 2022



E3





**Job Order Information Document**

<b>EZIQC Contract No.: 2021-0104</b>	
Work Order Number: 110107.00	Work Order Date: 04/26/2023
Work Order Title: City of Nixa Police Firing Range Training Building	
Owner Name: City of Nixa	Contractor Name: Hambey Construction, LLC
Contact: Stephanie Ewing	Contact: Eric Hambey
Phone: 417-449-0555	Phone: 417-840-8615
<b>Work to be Performed</b>	
Work to be performed as per the Final Detailed Scope of Work Attached and as per the terms and conditions of ezIQC Contract No 2021-0104.	
<u>Brief Work Order Description:</u>	
City of Nixa Police Firing Range Training Building	
<b>Time of Performance</b>	<i>See Schedule Section of the Detailed Scope of Work</i>
<b>Duration</b>	
<b>Liquidated Damages</b>	Will apply: <input checked="checked" type="checkbox"/> Will not apply: <input type="checkbox"/>
<b>Work Order Firm Fixed Price: \$269,818.42</b>	





## Detailed Scope of Work

---

**To:** Stephanie Ewing  
City of Nixa  
715 W Mount Vernon  
Nixa, MO 64714  
417-449-0555

**From:** Eric Hambey  
Hambey Construction, LLC  
3440 W. Division Street  
Springfield, MO 65770  
417-840-8615

**Date Printed:** April 26, 2023

**Work Order Number:** 110107.00

**Owner PO No:**

**Work Order Title:** City of Nixa Police Firing Range Training Building

**Brief Scope:** City of Nixa Police Firing Range Training Building

---

The following items detail the scope of work as discussed at the site. All requirements necessary to accomplish the items set forth below shall be considered part of this scope of work.

Scope of work:

Architectural Plans provided by GHN-A1.0, A1.2,A2.0,A3.0,A3.1 Dated 9-27-22

Important Notes:

Prevailing Wage Included (Wage Order #29)

Performance and Payment Bond Included

Inspections to be performed by the City of Nixa at Owners expense.

Owner will give access to Contractor between the hours of 6am-7pm, Monday-Saturday.

HVAC determined by Contractor-(Unit heater in Garage door bay area, HVAC split system for training area).

Exclusions:

\*No Permit Fees.

\*No overtime or after hours work.

\*No Electrical service (Owner to provide power to disconnect on building provided by Contractor)

\*No Sewer connection (Contractor to extend 4" piping 10' outside of new building, Owner to connect to piping).

\*Water service (Contractor to extend water line 10' outside of new building, Owner to connect to piping).

Subject to the terms and conditions of JOC Contract **2021-0104**.





## Contractor's Price Proposal - Summary

Date: April 26, 2023

Re: IQC Master Contract #: 2021-0104  
Work Order #: 110107.00  
Title: City of Nixa Police Firing Range Training Building  
Contractor: Hambey Construction, LLC  
Proposal Value: \$269,818.42

01 - General Conditions	\$11,390.47
03 - Concrete	\$49,330.44
03 - Excavation	\$4,324.36
06 - Framing	\$45,151.08
07 - Gutters and Downspouts	\$1,306.09
07 - Insulation	\$11,264.65
07 - Roofing	\$13,940.12
07 - Siding	\$16,051.42
08 - Doors	\$15,102.92
08 - Garage Door	\$6,834.41
09 - Drywall	\$16,655.42
09 - Flooring	\$1,624.98
09 - Painting	\$10,966.84
10 - Specialties	\$1,060.83
12 - Millwork	\$8,219.95
22 - Plumbing	\$18,052.76
23 - HVAC	\$18,184.85
26 - Electrical	\$18,810.81
32 - Landscaping	\$1,546.02
Proposal Total	\$269,818.42





## Contractor's Price Proposal - Detail

Date: April 26, 2023

Re: IQC Master Contract #: 2021-0104  
Work Order #: 110107.00  
Title: City of Nixa Police Firing Range Training Building  
Contractor: Hambey Construction, LLC  
Proposal Value: \$269,818.42

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		

### 01 - General Conditions

1	01 22 16 00 0002		EA	Reimbursable FeesReimbursable Fees will be paid to the contractor for eligible costs as directed by Owner. Insert the appropriate quantity to adjust the base cost to the actual Reimbursable Fee. If there are multiple Reimbursable Fees, list each one separately and add a comment in the "note" block to identify the Reimbursable Fee (e.g. sidewalk closure, road cut, various permits, extended warranty, expedited shipping costs, etc.). A copy of each receipt shall be submitted with the Price Proposal.	\$9,781.71
				Installation	
				Quantity	
				7,693.05	
				x	
				Unit Price	
				1.00	
				x	
				Factor	
				1.2715	
				=	
				Total	
				9,781.71	
				Bond	
2	01 71 13 00 0002		EA	Equipment Delivery, Pickup, Mobilization And Demobilization Using A Rollback Flatbed TruckIncludes loading, tie-down of equipment, delivery of equipment, off loading on site, rigging, dismantling, loading for return and transporting away. For equipment such as trenchers, skid-steer loaders (bobcats), industrial warehouse forklifts, sweepers, scissor platform lifts, telescoping and articulating boom man lifts with up to 40' boom lengths, etc.	\$845.90
				Installation	
				Quantity	
				3.00	
				x	
				Unit Price	
				221.76	
				x	
				Factor	
				1.2715	
				=	
				Total	
				845.90	
3	01 74 19 00 0016		EA	40 CY Dumpster (6 Ton) "Construction Debris"Includes delivery of dumpster, rental cost, pick-up cost, hauling, and disposal fee. Non-hazardous material.	\$762.86
				Installation	
				Quantity	
				1.00	
				x	
				Unit Price	
				599.97	
				x	
				Factor	
				1.2715	
				=	
				Total	
				762.86	

### Subtotal for 01 - General Conditions

\$11,390.47

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		

### 03 - Concrete

4	01 22 23 00 0351		WK	3/4 CY Hydraulic Excavator With Full-Time Operator	\$5,294.81
				Installation	
				Quantity	
				1.00	
				x	
				Unit Price	
				4,164.22	
				x	
				Factor	
				1.2715	
				=	
				Total	
				5,294.81	
				Concrete Footings	
5	01 22 23 00 0351 0051		MOD	For Equipment Without Operator, Deduct	-\$1,368.31
				Installation	
				Quantity	
				0.50	
				x	
				Unit Price	
				-2,152.27	
				x	
				Factor	
				1.2715	
				=	
				Total	
				-1,368.31	
6	03 11 13 00 0029		SF	Continuous Footings Foundation Metal Framed Formwork	\$2,397.79
				Installation	
				Quantity	
				420.00	
				x	
				Unit Price	
				4.49	
				x	
				Factor	
				1.2715	
				=	
				Total	
				2,397.79	





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.		Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)			
03 - Concrete						
7	03 11 13 00 0029	0009	MOD	For <1,000, Add		\$54.55
				Installation	Quantity 55.00 x Unit Price 0.78 x Factor 1.2715 = Total 54.55	
8	03 15 19 00 0038		EA	3/4" Diameter x 12" Length, Plain Steel, L-Type Cast In Place Anchor Bolt		\$291.11
				Installation	Quantity 19.00 x Unit Price 12.05 x Factor 1.2715 = Total 291.11	
9	03 21 11 00 0090		LF	#5, Grade 60, Footings, Steel Reinforcement Bar		\$2,100.34
				Installation	Quantity 1,242.00 x Unit Price 1.33 x Factor 1.2715 = Total 2,100.34	
10	03 21 16 00 0172		EA	5/8" Diameter x 24" Long, Epoxy Coated Deformed Straight Dowel		\$152.26
				Installation	Quantity 25.00 x Unit Price 4.79 x Factor 1.2715 = Total 152.26	
11	03 31 13 00 0005		SF	6" 3,000 PSI Slab On Grade Concrete Slabs Assembly		\$22,093.58
				Installation	Quantity 2,400.00 x Unit Price 7.24 x Factor 1.2715 = Total 22,093.58	
12	03 31 13 00 0005	0153	MOD	For 4,000 PSI Concrete, Add		\$884.96
				Installation	Quantity 2,400.00 x Unit Price 0.29 x Factor 1.2715 = Total 884.96	
13	03 31 13 00 0018		CY	Direct Chute, Place 3,000 PSI Concrete Continuous Footings		\$7,777.70
				Installation	Quantity 35.00 x Unit Price 174.77 x Factor 1.2715 = Total 7,777.70	
14	31 05 16 00 0005		CY	#5 Stone Aggregate Fill (1/2" To 1" Clean)		\$2,407.65
				Installation	Quantity 43.57 x Unit Price 43.46 x Factor 1.2715 = Total 2,407.65	
				Stone for 30'x65'x6" gravel pad outside of building		
15	31 05 16 00 0005		CY	#5 Stone Aggregate Fill (1/2" To 1" Clean)		\$6,189.05
				Installation	Quantity 112.00 x Unit Price 43.46 x Factor 1.2715 = Total 6,189.05	
				Building		
16	31 23 16 13 0016		CY	Load Excess Material by Machine for Removal from Excavation for Trenching		\$510.23
				Installation	Quantity 96.00 x Unit Price 4.18 x Factor 1.2715 = Total 510.23	
17	31 23 16 13 0016	0077	MOD	For >50 To 250, Add		\$128.17
				Installation	Quantity 96.00 x Unit Price 1.05 x Factor 1.2715 = Total 128.17	
18	32 11 23 16 0004		SF	4" Crushed Aggregate Base Course For Sidewalks		\$325.00
				Installation	Quantity 360.00 x Unit Price 0.71 x Factor 1.2715 = Total 325.00	





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

											Line Total		
Sect.		Item		Modifier	UOM	Description							
Labor	Equip.		Material		(Excluded if marked with an X)								
03 - Concrete													
19	32	11	23	16	0004	0012	MOD	For Up To 1,000, Add				\$91.55	
							Installation	Quantity		Unit Price	Factor	Total	
								360.00	x	0.20	x	1.2715 =	91.55
Subtotal for 03 - Concrete											\$49,330.44		

Sect.		Item		Modifier		UOM		Description		Line Total	
Labor	Equip.	Material	(Excluded if marked with an X)								
03 - Excavation											
20	01	22	23	00	0289		WK	3,000 LB Capacity, 78" Wide, Tracked Skid-Steer Loader With Full-Time Operator			\$5,114.29
							Installation	Quantity	Unit Price	Factor	Total
								1.00	4,022.25	x	5,114.29
								site prep and prep for gravel pad outside of building.			
21	01	22	23	00	0289	0051	MOD	For Equipment Without Operator, Deduct			-\$1,556.97
							Installation	Quantity	Unit Price	Factor	Total
								0.58	-2,111.23	x	-1,556.97
22	01	22	23	00	0427		DAY	1 CY, 24" Bucket, 14'-4" Deep, 75 HP, Loader-Backhoe With Full-Time Operator			\$1,040.70
							Installation	Quantity	Unit Price	Factor	Total
								1.00	818.48	x	1,040.70
								Utility trench for 10' outside building permiter			
23	01	22	23	00	0427	0051	MOD	For Equipment Without Operator, Deduct			-\$273.66
							Installation	Quantity	Unit Price	Factor	Total
								0.50	-430.45	x	-273.66
Subtotal for 03 - Excavation											\$4,324.36

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
06 - Framing					
24	01 22 23 00 0057		MO	20' Electric, Scissor Platform Lift	\$874.77
				Quantity	Unit Price
			Installation	1.00 x	687.98 x
					Factor =
					Total
					874.77
				Framing	
25	01 22 23 00 0076		MO	33' Engine Powered, Scissor Platform Lift	\$2,095.81
				Quantity	Unit Price
			Installation	1.00 x	1,648.30 x
					Factor =
					Total
					2,095.81
				Framing/Metal Panel Installation	





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.		Item		Modifier	UOM	Description				Line Total
Labor	Equip.	Material	(Excluded if marked with an X)							
06 - Framing										
26	01 22 23	00 0959		DAY	60 To 65 Ton Lift, Truck Mounted Hydraulic Crane With Full-Time Operator					\$5,060.14
				Installation	Quantity		Unit Price		Factor	Total
					2.00	x	1,989.83	x	1.2715 =	5,060.14
27	01 22 23	00 0959	0034	MOD	For Equipment Without Operator, Deduct					-\$570.76
				Installation	Quantity		Unit Price		Factor	Total
					1.00	x	-448.89	x	1.2715 =	-570.76
28	06 11 16	00 0027		LF	2" x 4" Pressure Treated Wood Purlin					\$3,179.97
				Installation	Quantity		Unit Price		Factor	Total
					1,624.00	x	1.54	x	1.2715 =	3,179.97
29	06 11 16	00 0062		SF	2" x 6" Wood Wall Framing At 16" On Center					\$9,108.82
				Installation	Quantity		Unit Price		Factor	Total
					2,936.00	x	2.44	x	1.2715 =	9,108.82
30	06 11 16	00 0132		LF	2" x 6" Pressure Treated Wood Blocking To Wood					\$291.24
				Installation	Quantity		Unit Price		Factor	Total
					45.00	x	5.09	x	1.2715 =	291.24
31	06 16 33	00 0042		SF	1/2" Thick Structural Oriented Strand Board (OSB) On Walls					\$3,974.40
				Installation	Quantity		Unit Price		Factor	Total
					1,776.00	x	1.76	x	1.2715 =	3,974.40
				OSB on walls						
32	06 16 33	00 0042	0013	MOD	For >1,408 To 3,200, Deduct					-\$112.91
				Installation	Quantity		Unit Price		Factor	Total
					1,776.00	x	-0.05	x	1.2715 =	-112.91
33	06 17 53	00 0017		EA	40' Pre-Assembled Wood Roof Truss, 4 In 12 Slope					\$20,728.35
				Installation	Quantity		Unit Price		Factor	Total
					31.00	x	525.88	x	1.2715 =	20,728.35
				Trusses						
34	07 26 13	00 0010		CSF	Building Wrap (Tyvek)					\$521.25
				Installation	Quantity		Unit Price		Factor	Total
					9.00	x	45.55	x	1.2715 =	521.25

**Subtotal for 06 - Framing** **\$45,151.08**

Sect.		Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)			
07 - Gutters and Downspouts						
35	07 71 23	00 0004		LF	5", 0.027" Thick, K-Style Aluminum Gutter	\$970.41
				Installation	Quantity 120.00 x Unit Price 6.36 x Factor 1.2715 = Total 970.41	





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
07 - Gutters and Downspouts					
36	07 71 23 00 0054		LF	3" x 4", 0.019" Thick, Rectangular Aluminum Downspout	\$335.68
				Quantity	Unit Price
			Installation	60.00 x	4.40 x
				Factor	Total
				1.2715 =	335.68

**Subtotal for 07 - Gutters and Downspouts** **\$1,306.09**

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
07 - Insulation					
37	07 21 16 00 0006		SF	5-1/2" Thick, Kraft Faced, R-21 Fiberglass Flexible Insulation	\$5,314.03
				Quantity	Unit Price
			Installation	2,662.00 x	1.57 x
				Factor	Total
				1.2715 =	5,314.03
38	07 21 26 00 0012		SF	14-1/2" Thick, R-38 Attic, Fiberglass Blown In Insulation	\$5,950.62
				Quantity	Unit Price
			Installation	2,400.00 x	1.95 x
				Factor	Total
				1.2715 =	5,950.62

**Subtotal for 07 - Insulation** **\$11,264.65**

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
07 - Roofing					
39	07 26 13 00 0007		CLF	4" Wide Self Adhering Butyl Sealing Tape	\$104.47
			Installation	Quantity 1.00 x Unit Price 82.16 x Factor 1.2715 = Total 104.47	
40	07 41 13 00 0008		SF	26 Gauge, Corrugated Or Ribbed, Galvanized Exposed Fastener Metal Roof Panels	\$13,553.68
			Installation	Quantity 2,520.00 x Unit Price 4.23 x Factor 1.2715 = Total 13,553.68	
				Kynar Coated Roof Panels	
41	07 62 13 00 0031		SF	26 Gauge, 0.022" Thick, Galvanized Steel Flashing	\$281.97
			Installation	Quantity 21.00 x Unit Price 10.56 x Factor 1.2715 = Total 281.97	

**Subtotal for 07 - Roofing** **\$13,940.12**

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
07 - Siding					





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00

Work Order Title: City of Nixa Police Firing Range Training

Building										
Sect.	Item	Modifier	UOM	Description	Line Total					
Labor	Equip.	Material	(Excluded if marked with an X)							
07 - Siding										
42	07	46	19	00 0006	SF	26 Gauge, Painted Finish, Corrugated Steel Siding Panel				\$16,051.42
					Installation	Quantity		Unit Price	Factor	Total
						2,400.00	x	5.26	x	1.2715 = 16,051.42
					Roof Panels					

**Subtotal for 07 - Siding \$16,051.42**

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
08 - Doors					
43	08 12 13 13 0041		EA	3' x 6'-8" Through 7'-2" High, 5-3/4" Deep, 16 Gauge, Knock Down Hollow Metal Door Frame	\$2,010.94
			Installation	Quantity Unit Price Factor = Total	
				5.00 x 316.31 x 1.2715 = 2,010.94	
				Door frame	
44	08 12 13 13 0041 0069		MOD	For Auxiliary Frame Reinforcement For Hinges, Add	\$193.01
			Installation	Quantity Unit Price Factor = Total	
				5.00 x 30.36 x 1.2715 = 193.01	
45	08 12 13 13 0041 0074		MOD	For Welded Frames, Add	\$541.09
			Installation	Quantity Unit Price Factor = Total	
				5.00 x 85.11 x 1.2715 = 541.09	
46	08 12 13 13 0048		EA	6' x 6'-8" Through 7'-2" High, 5-3/4" Deep, 16 Gauge, Knock Down Hollow Metal Door Frame	\$985.57
			Installation	Quantity Unit Price Factor = Total	
				2.00 x 387.56 x 1.2715 = 985.57	
				Door frame	
47	08 13 13 13 0049		EA	3' x 7' x 1-3/4", 18 Gauge, Level 2 Heavy Duty, Honeycomb Core, Hollow Metal Door	\$8,978.34
			Installation	Quantity Unit Price Factor = Total	
				9.00 x 784.58 x 1.2715 = 8,978.34	
				Door Slab	
48	08 71 11 00 2278		EA	Classroom F84 Bored LocksetLocked with key outside. Inside always unlocked.	\$2,502.11
			Installation	Quantity Unit Price Factor = Total	
				8.00 x 245.98 x 1.2715 = 2,502.11	
				Door Hardware	
49	08 71 11 00 2278 0267		MOD	For Grade 2, Deduct	-\$108.14
			Installation	Quantity Unit Price Factor = Total	
				9.00 x -9.45 x 1.2715 = -108.14	

**Subtotal for 08 - Doors \$15,102.92**





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
08 - Garage Door					
50	08 36 13 00 0151		EA	16' x 8', Insulated, Fiberglass Sectional Door, Manual Lift	\$6,269.96
				Quantity Unit Price Factor = Total	
			Installation	1.00 x 4,931.15 x 1.2715 = 6,269.96	
				Actual size 18'x8'	
51	08 36 13 00 0159		LF	Weather Seal At Top Of Door For Sectional Overhead Doors	\$106.20
				Quantity Unit Price Factor = Total	
			Installation	18.00 x 4.64 x 1.2715 = 106.20	
				Overhead door	
52	08 36 13 00 0160		LF	Astragal Only, Weather Strip At Bottom Of Door For Sectional Overhead Doors	\$47.15
				Quantity Unit Price Factor = Total	
			Installation	18.00 x 2.06 x 1.2715 = 47.15	
				Overhead door	
53	08 36 13 00 0161		EA	Cylinder Lock For Sectional Overhead Doors	\$411.10
				Quantity Unit Price Factor = Total	
			Installation	1.00 x 323.32 x 1.2715 = 411.10	
				Overhead door	
Subtotal for 08 - Garage Door					\$6,834.41

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
09 - Drywall					
54	09 29 10 00 0009		SF	5/8" Type X Fire Rated Gypsum Board	\$6,393.71
				Quantity Unit Price Factor = Total	
			Installation	4,656.00 x 1.08 x 1.2715 = 6,393.71	
				Drywall Walls	
55	09 29 10 00 0009	0051	MOD	For Horizontal Installation >10' High, Add	\$2,249.64
				Quantity Unit Price Factor = Total	
			Installation	4,656.00 x 0.38 x 1.2715 = 2,249.64	
56	09 29 10 00 0009	0052	MOD	For Walls >10' High, Add	\$355.21
				Quantity Unit Price Factor = Total	
			Installation	4,656.00 x 0.06 x 1.2715 = 355.21	
57	09 29 10 00 0012		SF	5/8" Type C Fire Rated Gypsum Board	\$3,417.79
				Quantity Unit Price Factor = Total	
			Installation	2,400.00 x 1.12 x 1.2715 = 3,417.79	
				Drywall Ceiling	





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.		Item		Modifier	UOM	Description					Line Total
Labor	Equip.	Material		(Excluded if marked with an X)							
09 - Drywall											
58	09 29 10	00 0012	0052	MOD	For Walls >10' High, Add					\$183.10	
				Installation	Quantity		Unit Price		Factor	Total	
					2,400.00	x	0.06	x	1.2715 =	183.10	
59	09 29 10	00 0012	0055	MOD	For >1,536, Deduct					-\$274.64	
				Installation	Quantity		Unit Price		Factor	Total	
					2,400.00	x	-0.09	x	1.2715 =	-274.64	
60	09 29 10	00 0038		SF	Up To 10' High, Walls, Tape, Spackle And Finish Gypsum Board					\$4,396.14	
				Installation	Quantity		Unit Price		Factor	Total	
					7,056.00	x	0.49	x	1.2715 =	4,396.13	
				Drywall Smooth Finish							
61	09 29 10	00 0038	0044	MOD	For >5,400, Deduct					-\$448.59	
				Installation	Quantity		Unit Price		Factor	Total	
					7,056.00	x	-0.05	x	1.2715 =	-448.59	
62	09 29 10	00 0044		LF	Up To 10' High, Vertical Corners, Tape, Spackle And Finish Gypsum Board					\$355.21	
				Installation	Quantity		Unit Price		Factor	Total	
					288.00	x	0.97	x	1.2715 =	355.21	
				Drywall							
63	09 29 10	00 0051		LF	Corner Bead, Galvanized Steel For Gypsum Board					\$27.85	
				Installation	Quantity		Unit Price		Factor	Total	
					10.00	x	2.19	x	1.2715 =	27.85	
				Drywall corner							
Subtotal for 09 - Drywall											\$16,655.42

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
09 - Flooring					
64	09 65 13 13 0007		LF	4" High, 1/8" Thick, Type TP Thermoplastic Rubber Wall Base, All Colors	\$1,624.98
			Installation	Quantity 426.00 x Unit Price 3.00 x Factor 1.2715 = Total 1,624.98	
			Vinyl base		

**Subtotal for 09 - Flooring** **\$1,624.98**

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
09 - Painting					





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

										Line Total
Sect.	Item	Modifier	UOM	Description						
Labor	Equip.	Material	(Excluded if marked with an X)							
09 - Painting										
65	09 91 23 00 0064		SF	2 Coats Paint, Brush/Roller Work, Paint Interior Plaster/Drywall Walls						\$12,149.54
			Installation	Quantity		Unit Price		Factor	=	Total
				8,456.00	x	1.13	x	1.2715	=	12,149.54
66	09 91 23 00 0064	0284	MOD	For >5,000 To 10,000, Deduct						-\$1,182.70
			Installation	Quantity		Unit Price		Factor	=	Total
				8,456.00	x	-0.11	x	1.2715	=	-1,182.70
Subtotal for 09 - Painting										\$10,966.84

Sect.				Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)					
10 - Specialties								
67	10	14	23	11	0022	EA	Up To 25 SI, Acrylic, Surface Mount, Indoor/Outdoor Signs With Braille	\$48.19
						Installation	Quantity 1.00 x Unit Price 37.90 x Factor 1.2715 = Total 48.19	
						Bathroom/Exit signage. No Occupancy signage.		
68	10	28	13	13	0019	EA	Surface Mounted, Acrylonitrile Butadiene Styrene (ABS) Plastic Folded Paper Towel Dispenser (Bobrick Matrix B-5262)	\$146.25
						Installation	Quantity 2.00 x Unit Price 57.51 x Factor 1.2715 = Total 146.25	
						Restroom Accessory		
69	10	28	13	13	0027	EA	Two Roll, Surface Mounted, Acrylonitrile Butadiene Styrene (ABS) Plastic Toilet Tissue Dispenser (Bobrick B-5288)	\$145.59
						Installation	Quantity 2.00 x Unit Price 57.25 x Factor 1.2715 = Total 145.59	
						Restroom Accessory		
70	10	28	13	13	0064	EA	24 Fluid Ounce, Surface Mounted, Translucent Polyethylene Soap Dispenser (Bobrick B-156)	\$106.09
						Installation	Quantity 2.00 x Unit Price 41.72 x Factor 1.2715 = Total 106.09	
						Restroom Accessory		
71	10	28	13	13	0142	EA	Surface Mounted, Stainless Steel Sanitary Napkin/Tampon Disposal (Bobrick Contura B-270)	\$79.29
						Installation	Quantity 1.00 x Unit Price 62.36 x Factor 1.2715 = Total 79.29	
						Restroom Accessory		
72	10	28	13	13	0153	EA	30" Length, 1-1/4" Diameter, Stainless Steel Grab Bar (Bobrick B-5806x30)	\$133.81
						Installation	Quantity 2.00 x Unit Price 52.62 x Factor 1.2715 = Total 133.81	
						Restroom Accessory		





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.		Item		Modifier	UOM	Description	Line Total	
Labor	Equip.	Material	(Excluded if marked with an X)					
10 - Specialties								
73	10 28 13 13 0154		EA		36" Length, 1-1/4" Diameter, Stainless Steel Grab Bar (Bobrick B-5806x36)			\$136.25
			Installation	Quantity	Unit Price	Factor	=	Total
				2.00	53.58	x	1.2715	136.25
					grab bar			
74	10 28 13 13 0340		EA		18" x 24", Surface Mounted, Stainless Steel Channel Frame Glass Mirror (Bobrick B-165 1824)			\$265.36
			Installation	Quantity	Unit Price	Factor	=	Total
				2.00	104.35	x	1.2715	265.36
					mirror			
Subtotal for 10 - Specialties								\$1,060.83
Sect.		Item		Modifier	UOM	Description	Line Total	
Labor	Equip.	Material	(Excluded if marked with an X)					
12 - Millwork								
75	12 56 53 00 0332		EA		30" Wide x 28-1/2" High x 22.3" Deep, Open, Plastic Laminate Laboratory Base Cabinet			\$3,393.84
			Installation	Quantity	Unit Price	Factor	=	Total
				3.00	889.72	x	1.2715	3,393.84
76	12 56 53 00 0333		EA		36" Wide x 28-1/2" High x 22.3" Deep, Open, Plastic Laminate Laboratory Base Cabinet			\$4,826.11
			Installation	Quantity	Unit Price	Factor	=	Total
				4.00	948.90	x	1.2715	4,826.11
Subtotal for 12 - Millwork								\$8,219.95
Sect.		Item		Modifier	UOM	Description	Line Total	
Labor	Equip.	Material	(Excluded if marked with an X)					
22 - Plumbing								
77	07 65 33 00 0002		EA		2" Diameter Pipe, Neoprene Roof Boot			\$88.46
			Installation	Quantity	Unit Price	Factor	=	Total
				3.00	23.19	x	1.2715	88.46
78	07 65 33 00 0003		EA		3" Diameter Pipe, Neoprene Roof Boot			\$34.93
			Installation	Quantity	Unit Price	Factor	=	Total
				1.00	27.47	x	1.2715	34.93
79	22 11 16 00 0646		EA		1" Crimped Copper 90 Degree Elbow			\$188.13
			Installation	Quantity	Unit Price	Factor	=	Total
				6.00	24.66	x	1.2715	188.13





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.		Item	Modifier	UOM	Description					Line Total	
Labor	Equip.	Material	(Excluded if marked with an X)								
22 - Plumbing											
80	22 11 16	00 0664		EA	1/2" Crimped Copper Straight Tee						\$170.20
					Installation	Quantity		Unit Price		Factor	Total
						6.00	x	22.31	x	1.2715 =	170.20
81	22 11 16	00 0666		EA	1" Crimped Copper Straight Tee						\$107.42
					Installation	Quantity		Unit Price		Factor	Total
						2.00	x	42.24	x	1.2715 =	107.42
82	22 11 16	00 0675		EA	1" Crimped Copper Reducing Tee						\$0.00
					Installation	Quantity		Unit Price		Factor	Total
						0.00	x	47.93	x	1.2715 =	0.00
83	22 11 16	00 0683		EA	1/2" Crimped Copper Coupling						\$624.82
					Installation	Quantity		Unit Price		Factor	Total
						36.00	x	13.65	x	1.2715 =	624.82
84	22 11 16	00 0684		EA	3/4" Crimped Copper Coupling						\$209.67
					Installation	Quantity		Unit Price		Factor	Total
						10.00	x	16.49	x	1.2715 =	209.67
85	22 11 16	00 0685		EA	1" Crimped Copper Coupling						\$159.37
					Installation	Quantity		Unit Price		Factor	Total
						6.00	x	20.89	x	1.2715 =	159.37
86	22 11 16	00 0694		EA	1" Crimped Copper Reducing Coupling						\$148.82
					Installation	Quantity		Unit Price		Factor	Total
						4.00	x	29.26	x	1.2715 =	148.82
87	22 11 16	00 0854		LF	3/4" Inside Diameter Copper Pipe/Tubing Type L AssemblyIncludes all hangers and couplings, elbow, tee, reducer fittings. All hangers are complete assemblies. Not for use where detail is available.						\$140.98
					Installation	Quantity		Unit Price		Factor	Total
						7.00	x	15.84	x	1.2715 =	140.98
88	22 11 19	00 0220		EA	Plastic Ice Maker Outlet Box, 1/2" Quarter Turn Ball Valve With Water Hammer Arrestor, Wall Mount						\$137.27
					Installation	Quantity		Unit Price		Factor	Total
						1.00	x	107.96	x	1.2715 =	137.27
89	22 11 19	00 0540		EA	6" Long, 1/2" Antisiphon Freezeless Wall Faucet						\$107.80
					Installation	Quantity		Unit Price		Factor	Total
						1.00	x	84.78	x	1.2715 =	107.80
90	22 13 13	00 0044		EA	Single Fixture Rough-In, Polyvinyl Chloride (PVC) Waste And Vent Pipe, Tank Type, Floor Mounted, Water ClosetIncludes polyvinyl chloride (PVC) waste and vent pipe and copper domestic supply. Excludes fixture.						\$793.14
					Installation	Quantity		Unit Price		Factor	Total
						2.00	x	311.89	x	1.2715 =	793.14
					Toilet						





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
<b>22 - Plumbing</b>					
91	22 13 13 00 0046		EA	Single Fixture Rough-In, Polyvinyl Chloride (PVC) Waste And Vent Pipe, Wall Mounted, LavatoryIncludes polyvinyl chloride (PVC) waste and vent pipe and copper domestic supply. Excludes fixture, carrier and faucet.	\$564.83
			Installation	Quantity 2.00 x Unit Price 222.11 x Factor 1.2715 = Total 564.83	
92	22 13 13 00 0050		EA	Single Fixture Rough-In, Polyvinyl Chloride (PVC) Waste And Vent Pipe, Floor Mounted, Service SinkIncludes polyvinyl chloride (PVC) waste and vent pipe and copper domestic supply. Excludes fixture and faucet.	\$396.57
			Installation	Quantity 1.00 x Unit Price 311.89 x Factor 1.2715 = Total 396.57	
93	22 13 16 00 0507		LF	2" Schedule 40 Polyvinyl Chloride (PVC) DWV Pipe AssemblyIncludes all fittings, couplings and hangers. Fittings are assumed every 10'. Not for use where detail is available.	\$1,488.16
			Installation	Quantity 70.00 x Unit Price 16.72 x Factor 1.2715 = Total 1,488.16	
94	22 13 16 00 0509		LF	4" Schedule 40 Polyvinyl Chloride (PVC) DWV Pipe AssemblyIncludes all fittings, couplings and hangers. Fittings are assumed every 10'. Not for use where detail is available.	\$2,594.78
			Installation	Quantity 66.00 x Unit Price 30.92 x Factor 1.2715 = Total 2,594.78	
95	22 13 19 13 0004		EA	Bronze Top, 6" Round Top Floor Drain With 3" Outlet	\$2,566.13
			Installation	Quantity 3.00 x Unit Price 672.73 x Factor 1.2715 = Total 2,566.13	
96	22 33 30 16 0003		EA	40 Gallon, Electric Domestic Water Heater	\$1,071.37
			Installation	Quantity 1.00 x Unit Price 842.60 x Factor 1.2715 = Total 1,071.37	
97	22 33 30 16 0021		EA	7.6 Gallon, Expansion Pressure Tank For Water Heaters	\$232.34
			Installation	Quantity 1.00 x Unit Price 182.73 x Factor 1.2715 = Total 232.34	
98	22 33 30 16 0028		EA	24" Diameter, 2-1/2" Deep, Polyethylene Water Heater Drain Pan	\$39.10
			Installation	Quantity 1.00 x Unit Price 30.75 x Factor 1.2715 = Total 39.10	
99	22 42 13 13 0029		EA	Flush Valve Type, Siphon Jet, Floor Mounted, Floor Outlet, Handicap Accessible, Elongated Vitreous China Water Closet (Zurn HET Z5667-BWL)	\$1,142.29
			Installation	Quantity 2.00 x Unit Price 449.19 x Factor 1.2715 = Total 1,142.29	
100	22 42 16 13 0009		EA	27" x 20" Wheelchair Accessible, Vitreous China Wall Hung Lavatory (American Standard Wheel Chair Users)	\$1,410.88
			Installation	Quantity 2.00 x Unit Price 554.81 x Factor 1.2715 = Total 1,410.88	





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.		Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)			
22 - Plumbing						
101	22 42 16 13	0085		EA	Wall Mounted Adjustable Plate Type, Single Lavatory Carrier With Concealed Arms	\$943.86
				Installation	Quantity 2.00 x Unit Price 371.16 x Factor 1.2715 = Total 943.86	
102	22 42 16 16	0012		EA	17" x 22" x 10" Stainless Steel Kitchen Sink, Single Bowl, 18 Gauge (Elkay DLR172210)	\$1,154.08
				Installation	Quantity 1.00 x Unit Price 907.65 x Factor 1.2715 = Total 1,154.08	
103	22 42 16 16	0048		EA	24" x 24" x 10" Molded Stone Mop Service Sink With Strainer (Swanstone MS-2424-010)	\$577.13
				Installation	Quantity 1.00 x Unit Price 453.90 x Factor 1.2715 = Total 577.13	
					Mop sink/service sink	
104	22 42 39 00	0017		EA	Deck Mount Gooseneck Sink Faucet, 4" Center Set, Blade Handles (Chicago Faucet 802-317CP)	\$286.61
				Installation	Quantity 1.00 x Unit Price 225.41 x Factor 1.2715 = Total 286.61	
					Breakroom Faucet	
105	22 42 39 00	0026		EA	4" Centerset Lavatory Faucet With Chrome Lever Handle (Delta 501LF-WF)	\$334.63
				Installation	Quantity 2.00 x Unit Price 131.59 x Factor 1.2715 = Total 334.63	
					Lavatory Faucets	
106	22 42 39 00	0074		EA	3" Spout, Wall Mount, Service Sink Faucet With Lever Handles (American Standard 8340.235)	\$338.99
				Installation	Quantity 1.00 x Unit Price 266.61 x Factor 1.2715 = Total 338.99	
					Service Sink Faucet	

**Subtotal for 22 - Plumbing** **\$18,052.76**

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
23 - HVAC					
107	07 65 33 00 0004		EA	4" Diameter Pipe, Neoprene Roof Boot	\$39.01
			Installation	Quantity 1.00 x Unit Price 30.68 x Factor 1.2715 = Total 39.01	
108	08 91 16 00 0035		EA	24" Wide x 30" High Adjustable Intake Louver, Galvanized AluminumIncludes bird screen. Excludes actuator.	\$1,204.02
			Installation	Quantity 1.00 x Unit Price 946.93 x Factor 1.2715 = Total 1,204.02	
				Louver	





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
23 - HVAC					
109	23 05 93 00 0015		EA	Balancing HVAC Duct System, Ceiling Height To 12' Supply, Return, Exhaust, Register And Diffuser	\$60.82
			Installation	Quantity 1.00 x Unit Price 47.83 x Factor 1.2715 = Total 60.82	
110	23 23 23 00 0008		LB	R-410A Refrigerant	\$118.44
			Installation	Quantity 7.50 x Unit Price 12.42 x Factor 1.2715 = Total 118.44	
111	23 31 13 13 0004		LB	3" WG (Class B), Rectangular Or Square, Galvanized Steel Sheet Metal Ductwork	\$8,916.39
			Installation	Quantity 850.00 x Unit Price 8.25 x Factor 1.2715 = Total 8,916.39	
112	23 31 13 13 0004 0521		MOD	For >500 To 1,000, Add	\$1,415.82
			Installation	Quantity 850.00 x Unit Price 1.31 x Factor 1.2715 = Total 1,415.82	
113	23 34 16 00 0248		EA	70 CFM, Ceiling/Wall Mounted, Polymeric Intake Grille, Light Duty Exhaust Fan Without Light (Broan® 671)	\$291.17
			Installation	Quantity 2.00 x Unit Price 114.50 x Factor 1.2715 = Total 291.17	
				Restroom Exhaust fans	
114	23 54 13 00 0010		EA	>3.5 To 5 Ton Up/Horizontal Flow Multi-Speed Air Handler/ Electric FurnaceExcludes cooling equipment.	\$2,393.43
			Installation	Quantity 1.00 x Unit Price 1,882.37 x Factor 1.2715 = Total 2,393.43	
				Electric Unit	
115	23 54 13 00 0015		EA	15 KW Heating Coil For Air Handler/Electric Furnace	\$381.41
			Installation	Quantity 1.00 x Unit Price 299.97 x Factor 1.2715 = Total 381.41	
				Electric Unit	
116	23 63 13 00 0022		EA	4 Ton, 14 SEER, Air Cooled Condensing UnitPrecharged with refrigerant capable of charging the system with a 20' length of piping.	\$3,364.34
			Installation	Quantity 1.00 x Unit Price 2,645.96 x Factor 1.2715 = Total 3,364.34	
Subtotal for 23 - HVAC					\$18,184.85

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
26 - Electrical					





Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect. Item Modifier UOM Description Line Total										
Labor	Equip.	Material	(Excluded if marked with an X)							
26 - Electrical										
117	01	22	23	00	0057	MO	20' Electric, Scissor Platform Lift			\$874.77
						Installation	Quantity	Unit Price	Factor	Total
							1.00	x	687.98	1.2715 = 874.77
						Electric				
118	26	05	29	00	0168	EA	3/4", One Hole Steel Conduit Strap			\$7.59
						Installation	Quantity	Unit Price	Factor	Total
							3.00	x	1.99	1.2715 = 7.59
119	26	05	29	00	0283	EA	16" Stud Spacing, 1-1/2" Or 2-1/8" Box Depth, Screw Gun Between Studs Box Bracket (Caddy SGB16A)			\$14.27
						Installation	Quantity	Unit Price	Factor	Total
							2.00	x	5.61	1.2715 = 14.27
120	26	05	33	13	0009	CLF	3/4" Electrical Metallic Tubing (EMT) Conduit Assembly With 2 #12 Copper THHN And 1 #12 Copper Insulated Grounding ConductorIncludes conduit, set screw connectors, set screw couplings, straps, wire as indicated. Not for use where detail is available.			\$2,802.84
						Installation	Quantity	Unit Price	Factor	Total
							4.00	x	551.09	1.2715 = 2,802.84
121	26	05	33	13	0602	LF	1" Electrical Metallic Tubing (EMT) Conduit			\$67.77
						Installation	Quantity	Unit Price	Factor	Total
							10.00	x	5.33	1.2715 = 67.77
						Data				
122	26	24	16	00	0014	EA	225 Ampere Rating, 120/240 Volt, 3 Wire, 1 Phase, Main Lugs, 42 Circuit Capacity Assembled Panelboard With Twenty-Eight 20 Ampere Breakers			\$2,893.29
						Installation	Quantity	Unit Price	Factor	Total
							1.00	x	2,275.49	1.2715 = 2,893.29
123	26	24	16	00	0187	EA	225 Ampere Rating, 42 Circuit Capacity, Main Breaker, NEMA 1, 240 Volt AC, 48 Volt DC, 3 Wire, 1 Phase, Unassembled Panelboard			\$2,045.97
						Installation	Quantity	Unit Price	Factor	Total
							1.00	x	1,609.10	1.2715 = 2,045.97
124	26	27	13	00	0012	EA	100 To 200 Amperes, 120 Volt, Or 240 Volt, 1 Phase, KWH Meter			\$0.00
						Installation	Quantity	Unit Price	Factor	Total
							0.00	x	209.07	1.2715 = 0.00
						Provided by Owner				
125	26	27	26	00	0005	EA	20 Amperes, 1 Gang, NEMA 5-20, Duplex Receptacle Assembly			\$1,016.40
						Installation	Quantity	Unit Price	Factor	Total
							13.00	x	61.49	1.2715 = 1,016.40
126	26	27	26	00	0068	EA	20 Amperes, Ground Fault Circuit Interrupter (GFCI), Duplex Receptacle			\$243.94
						Installation	Quantity	Unit Price	Factor	Total
							5.00	x	38.37	1.2715 = 243.94





## Contractor's Price Proposal - Detail Continues..

Work Order Number: 110107.00  
Work Order Title: City of Nixa Police Firing Range Training Building

Sect.		Item		Modifier	UOM	Description				Line Total	
Labor	Equip.		Material		(Excluded if marked with an X)						
26 - Electrical											
127	26	27	26	00	0138	EA	1 Gang, 20 Amperes, 120/277 Volt, SPST, Switch Assembly				\$343.11
						Installation	Quantity	Unit Price	Factor	=	Total
							3.00	x 89.95	x 1.2715		343.11
128	26	27	26	00	0140	EA	2 Gang, 20 Amperes, 120/277 Volt, SPST, Switch Assembly				\$349.18
						Installation	Quantity	Unit Price	Factor	=	Total
							2.00	x 137.31	x 1.2715		349.18
129	26	51	19	00	0013	EA	4,600 Lumens, 4' Length, Lensed LED Striplight Fixture (Lithonia ZL2)				\$641.42
						Installation	Quantity	Unit Price	Factor	=	Total
							2.00	x 252.23	x 1.2715		641.42
						Garage					
130	26	51	19	00	0086	EA	4' Length, 3,000 Lumens, Surface Mount, Volumetric LED Fixture (Lithonia STL4)				\$6,372.69
						Installation	Quantity	Unit Price	Factor	=	Total
							15.00	x 334.13	x 1.2715		6,372.69
						Training area					
131	26	51	19	00	0108	EA	6" Diameter, 1,800 Lumens, Recessed LED Downlight With Open Trim (Gotham® EVO® ALED)				\$811.38
						Installation	Quantity	Unit Price	Factor	=	Total
							3.00	x 212.71	x 1.2715		811.38
						outside light					
132	26	52	13	16	0002	EA	Single Face, Thermoplastic Housing, LED Exit Sign (Lithonia LQM-S-W-3-R-120/277-M6)				\$326.19
						Installation	Quantity	Unit Price	Factor	=	Total
							2.00	x 128.27	x 1.2715		326.19
						Exit lights at man doors					

**Subtotal for 26 - Electrical** **\$18,810.81**

Sect.	Item	Modifier	UOM	Description	Line Total
Labor	Equip.	Material	(Excluded if marked with an X)		
32 - Landscaping					
133	32 91 19 13 0014		SY	Furnish And Place Imported Screened Topsoil, 9" Deep	\$1,546.02
				Quantity	Unit Price
			Installation	105.00 x 11.58 x 1.2715 =	Total 1,546.02

**Subtotal for 32 - Landscaping** **\$1,546.02**





**Contractor's Price Proposal - Detail Continues..**

**Work Order Number:** 110107.00  
**Work Order Title:** City of Nixa Police Firing Range Training Building

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<b>Proposal Total</b>	<b>\$269,818.42</b>
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This total represents the correct total for the proposal. Any discrepancy between line totals, sub-totals and the proposal total is due to rounding.



# Missouri

## Division of Labor Standards

### WAGE AND HOUR SECTION



MICHAEL L. PARSON, Governor

## Annual Wage Order No. 29

Section 022  
**CHRISTIAN COUNTY**

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by

Todd Smith, Director  
Division of Labor Standards

Filed With Secretary of State: \_\_\_\_\_ **March 10, 2022**

Last Date Objections May Be Filed: **April 11, 2022**



OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Asbestos Worker	\$22.25*
Boilermaker	\$22.25*
Bricklayer	\$52.13
Carpenter	\$45.01
Lather	
Linoleum Layer	
Millwright	
Pile Driver	
Cement Mason	\$41.16
Plasterer	
Communications Technician	\$22.25*
Electrician (Inside Wireman)	\$45.37
Electrician Outside Lineman	\$22.25*
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Elevator Constructor	\$22.25*
Glazier	\$22.25*
Ironworker	\$63.58
Laborer	\$37.51
General Laborer	
First Semi-Skilled	
Second Semi-Skilled	
Mason	\$22.25*
Marble Mason	
Marble Finisher	
Terrazzo Worker	
Terrazzo Finisher	
Tile Setter	
Tile Finisher	
Operating Engineer	\$45.54
Group I	
Group II	
Group III	
Group III-A	
Group IV	
Group V	
Painter	\$22.25*
Plumber	\$51.63
Pipe Fitter	
Roofer	\$22.25*
Sheet Metal Worker	\$22.25*
Sprinkler Fitter	\$22.25*
Truck Driver	\$22.25*
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

\*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

\*\*The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in Section 290.210 RSMo.



Heavy Construction Rates for  
CHRISTIAN County

Section 022

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Carpenter	\$22.25*
Millwright	
Pile Driver	
Electrician (Outside Lineman)	\$22.25*
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Laborer	\$43.22
General Laborer	
Skilled Laborer	
Operating Engineer	\$48.56
Group I	
Group II	
Group III	
Group IV	
Truck Driver	\$41.03
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate Sheet.

\*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

\*\*The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in Section 290.210 RSMo.



# OVERTIME and HOLIDAYS

## OVERTIME

For all work performed on a Sunday or a holiday, not less than twice (2x) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work.

For all overtime work performed, not less than one and one-half (1½) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work or contractual obligation. For purposes of this subdivision, **"overtime work"** shall include work that exceeds ten hours in one day and work in excess of forty hours in one calendar week; and

A thirty-minute lunch period on each calendar day shall be allowed for each worker on a public works project, provided that such time shall not be considered as time worked.

## HOLIDAYS

January first;  
The last Monday in May;  
July fourth;  
The first Monday in September;  
November eleventh;  
The fourth Thursday in November; and  
December twenty-fifth;

If any holiday falls on a Sunday, the following Monday shall be considered a holiday.